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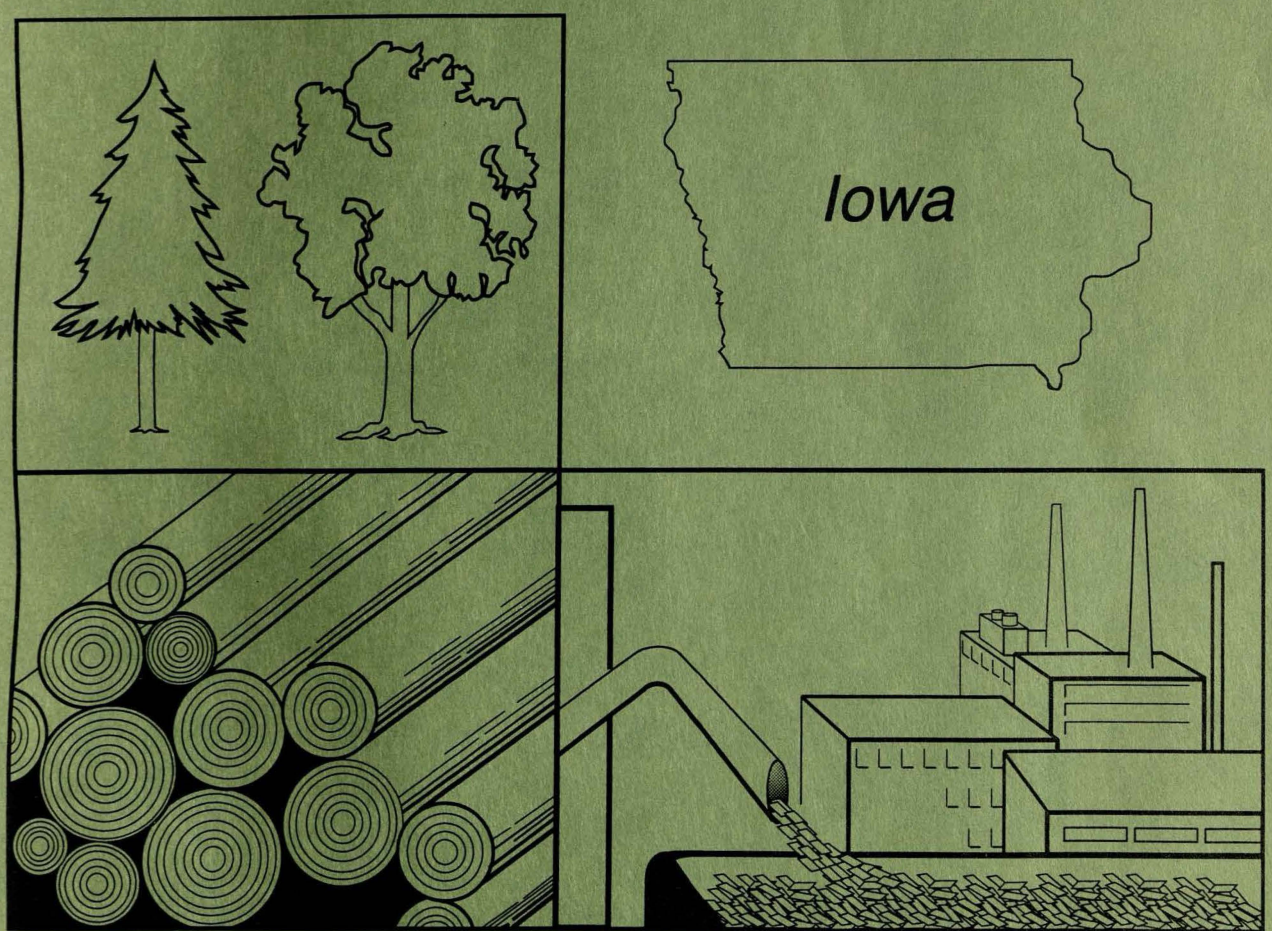
Iowa Timber Industry – An Assessment of Timber Product Output and Use, 1994

Ronald J. Piva



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FOREWORD

This bulletin reports findings of a survey of all primary wood-using mills in Iowa in 1994. Details of the industry's size, composition, its use of roundwood, and its generation and disposition of residues are discussed. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, forest industry development, and forest research.

Special thanks are given to the primary wood-using firms that supplied information for this study and to Dennis Michel, Utilization and Marketing Forester with the Iowa Department of Natural Resources (DNR), who coordinated the mill survey. Thanks are also given to the Iowa DNR District Foresters who canvassed the wood-using firms. All their cooperation is greatly appreciated.

In this bulletin, all volumes are reported in product-specific standard units and/or cubic feet. When necessary, volumes reported by mills in nonstandard units were converted to standard units using regional conversion factors. Reported trends and changes in the Iowa primary wood-using industry are based on comparisons with the previous survey conducted in 1988. Row and column data of tables may not sum due to rounding, but data in each table cell are accurately displayed.

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Iowa Timber Industry—An Assessment of Timber Product Output and Use, 1994

Ronald J. Piva

HIGHLIGHTS

PRIMARY WOOD-USING INDUSTRY

- In 1994, Iowa's primary wood-using industry was comprised of 69 sawmills, 1 veneer mill, and 1 pulp mill (table 1 and fig. 1).
- There were four more sawmills in 1994 than in 1988. The majority of the mills are small sawmills that process less than 1 million board feet of saw logs per year. Sixty of the 69 sawmills were in the two Eastern Survey Units of Iowa.

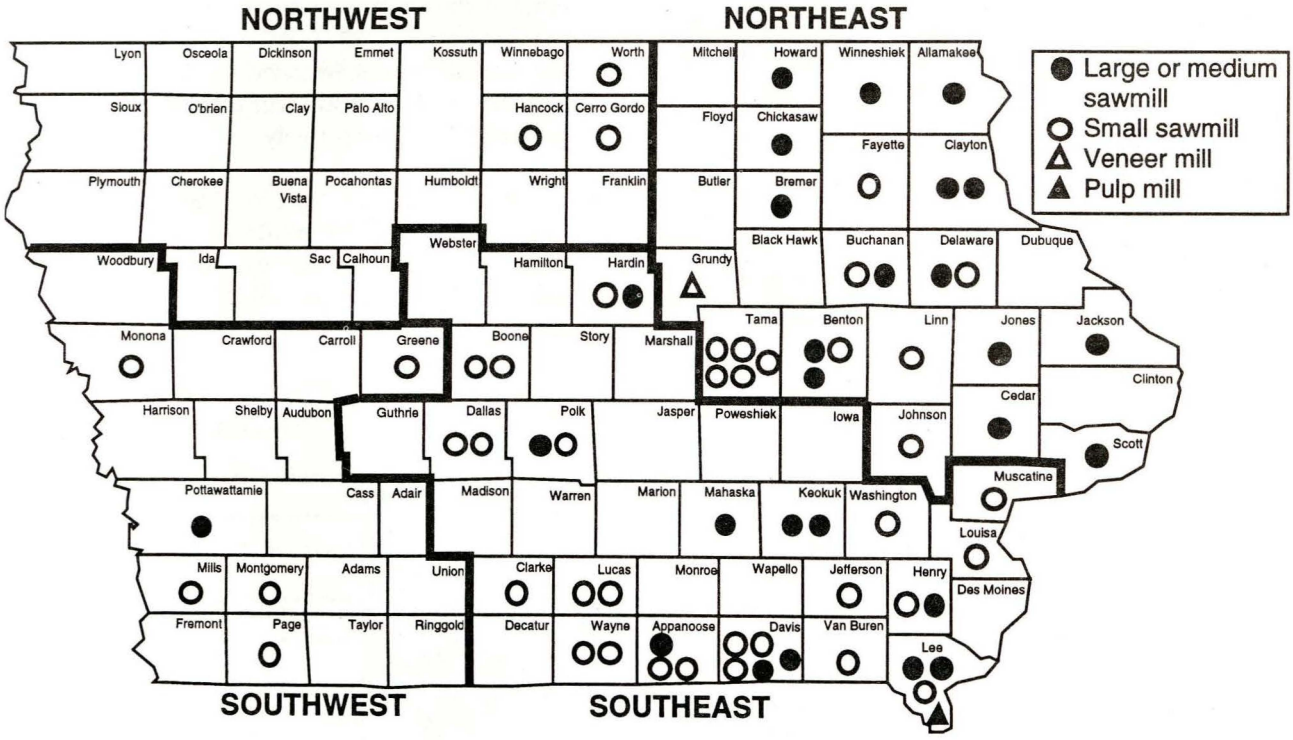

Figure 1.—*Forest Survey Units and number of mills by type and county, Iowa, 1994.*

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- The 69 sawmills processed nearly 19 million cubic feet of roundwood in 1994 (table 2).

- Iowa received 27 percent of its industrial roundwood from other States in 1994. Illinois sent 2.0 million cubic feet, Wisconsin sent 1.5 million cubic feet, Missouri shipped 1.1 million cubic feet, and Minnesota and Nebraska combined sent 0.4 million cubic feet. Forty-four percent of these imports were red oaks and white oaks.

INDUSTRIAL ROUNDWOOD PRODUCTION

- In 1994, 16.4 million cubic feet of industrial roundwood products were cut from Iowa's forest lands—an increase of 30 percent from 1988 (table 3).

- As with the previous surveys in 1972, 1980, and 1988, all of the softwood production in 1994 went into saw logs. Softwood production increased from 3 thousand cubic feet in 1988 to 21 thousand cubic feet in 1994.

- Hardwoods accounted for nearly 100 percent of Iowa's industrial roundwood production in 1994. Five species groups (red oak, cottonwood, white oak, soft maple, and black walnut) accounted for 81 percent of the total industrial roundwood production in 1994.

- The Northeast Unit led the State in industrial roundwood production in 1994 with 8,643 thousand cubic feet, followed by the Southeast Unit with 6,488 thousand cubic feet, the Southwest Unit with 988 thousand cubic feet, and the Northwest Unit with 243 thousand cubic feet (table 4 and fig. 2).

- Five counties—Clayton, Allamakee, Lee, Dubuque, and Fayette—accounted for 39 percent of all industrial roundwood produced in the State (table 5).

- Iowa exported 1,005 thousand cubic feet of industrial roundwood to Wisconsin in 1994. The other major importers of industrial roundwood from Iowa were Nebraska (792 thousand cubic feet), Minnesota (262 thousand cubic feet), Missouri (202 thousand cubic feet), and Illinois (169 thousand cubic feet) (table 6).

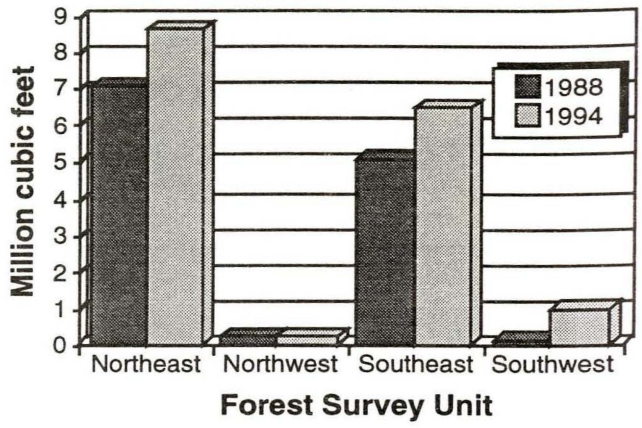

Figure 2.—*Industrial roundwood production by Forest Survey Unit, Iowa, 1988 and 1994.*

- Saw-log production accounted for 91 percent of the total industrial roundwood production in 1994. Pulpwood and veneer-log production accounted for 5 percent and 3 percent of the total industrial roundwood production, respectively.

- Production of saw logs in 1994 increased 37 percent from 1988, while ve neer-log production rose 5 percent and pulpwood production fell 15 percent (tables 7, 8, and 9, and fig. 3).

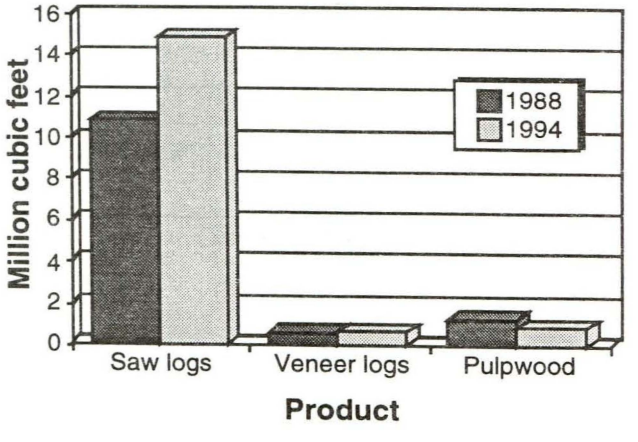

Figure 3.—*Industrial roundwood production by product, Iowa, 1988 and 1994.*

TIMBER REMOVALS FOR INDUSTRIAL ROUNDWOOD

- In the process of harvesting industrial roundwood, 27 million cubic feet of woody material were removed from Iowa's forest lands in 1994 (table 10).

- Just under 60 percent of the total woody material harvested was used for wood products, the rest was left on the ground (fig. 4).

- Of the total volume harvested, 60 percent came from growing stock; the rest was from non-growing-stock material, which includes limbwood, saplings, cull trees, dead trees, and nonforest trees.

- Seventy-six percent of the growing stock harvested came from sawtimber-size trees, while only 4 percent came from poletimber-size trees. The remaining 20 percent of the growing stock harvested was left on the ground as logging residue.

- There were 16,478 thousand cubic feet of hardwoods harvested from growing stock and 21 thousand cubic feet of softwoods harvested (table 11).

- Sawtimber removals from timberland rose 23 percent, from 54,955 thousand board feet in 1988 to 67,750 thousand board feet in 1994 (table 12).

- Only 30 percent of the non-growing-stock harvested was used for industrial roundwood products; the rest was left on the ground as logging slash.

- Cull trees accounted for 52 percent of the non-growing-stock volume that was used for roundwood products, followed by nonforest trees with 30 percent, limbwood with 14 percent, dead trees with 4 percent, and saplings with less than 1 percent.

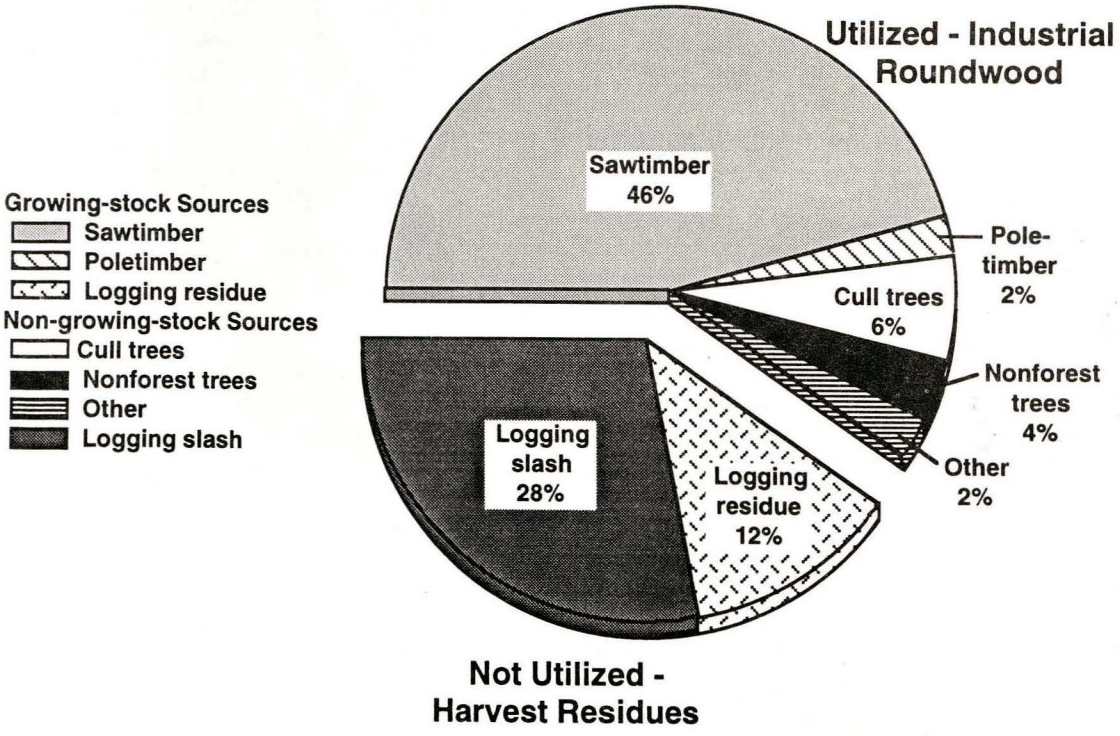

Figure 4.—*Distribution of timber removals for industrial roundwood by source of material, Iowa, 1994.*

- There was a total of 11,077 thousand cubic feet of logging residue and logging slash after the harvest of industrial roundwood in 1994 (table 13).

PRIMARY MILL RESIDUES

- In 1994, 262 thousand green tons of residues were generated by the State's primary wood-using industry in the process of converting industrial roundwood into products (table 14).

- Coarse wood residue such as slabs, edgings, and veneer cores accounted for 51 percent of the total residue material. Fine wood residue such as sawdust and veneer clippings accounted for 27 percent, and bark residue accounted for the remaining 22 percent (fig. 5).

- More than half (52 percent) of this residue volume was used for miscellaneous purposes such as bedding, litter, and mulch. Forty-six percent of the residue volume used for miscellaneous purposes was made up of fines; bark made up 30 percent of the volume and coarse residue made up 24 percent.

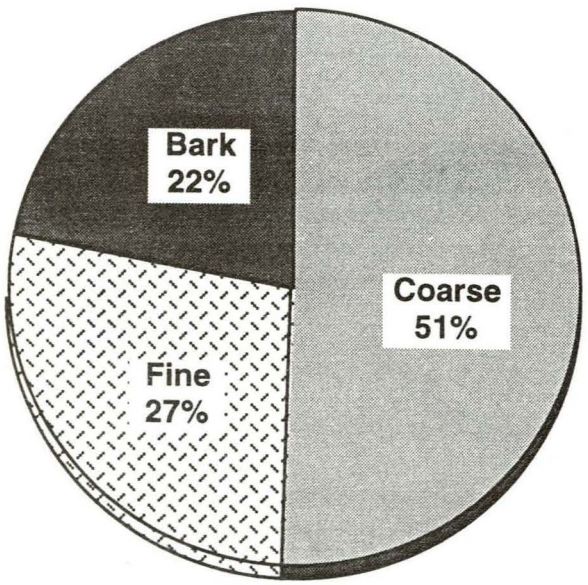

Figure 5.—*Distribution of residues generated by primary wood-using mills by type of residue, Iowa, 1994.*

- Thirty-percent of mill residues were used as fuel, of which 64 percent was domestic fuel. Most of the remaining mill residues, 18 percent, were used for fiber products. Coarse residues made up the majority of the residue used for both fuel and fiber products (fig. 6).

- In 1994, only 2 percent of the mill residues generated in the State went unused, but in 1988, 17 percent of the mill residues generated went unused.

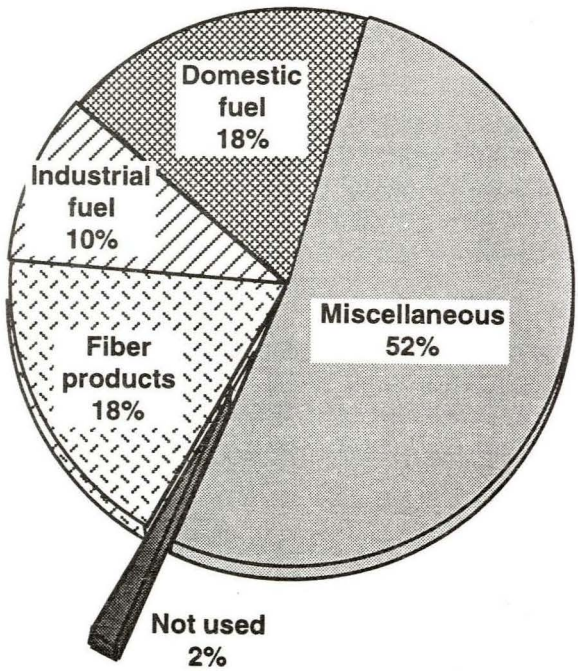

Figure 6.—*Distribution of residues generated by primary wood-using mills by method of disposal, Iowa, 1994.*

APPENDIX

STUDY METHODS

This study was a cooperative effort of the Iowa Department of Natural Resources (Iowa DNR) and the North Central Forest Experiment Station (NCFES). Using mail questionnaires supplied by NCFES and designed to determine the size and composition of a State's primary wood-using industry, its use of roundwood, and its generation and disposition of wood residues, the Iowa DNR canvassed all primary wood-using mills within the State. Followups to nonresponding mills using additional mailings, telephone, and personal contacts were made by the Iowa DNR until a 100-percent response was achieved. Completed questionnaires were sent to NCFES for editing and processing.

As part of data editing and processing, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors. Timber removals by source of material and harvest residues generated during logging were estimated from standard product volumes using factors developed from logging utilization studies previously conducted by NCFES. Finalized data on Iowa's industrial roundwood receipts were loaded into a regional timber removals database and supplemented with data on out-of-State uses of Iowa's roundwood to provide a complete assessment of Iowa's timber product output.

DEFINITION OF TERMS

Board foot.—Unit of measure applied to roundwood. It relates to lumber that is 1 foot long, 1 foot wide, and 1 inch thick (or its volume equivalent).

Central stem.—The portion of a tree between a 1-foot stump and the minimum 4.0-inch top diameter outside bark or the point where the central stem breaks into limbs.

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Commercial species.—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam, Osage-orange, and redbud.)

Cull removals.—Net volume of rough and rotten trees, plus the net volume in sections of the central stem of growing-stock trees that do not meet regional merchantability standards, harvested for industrial roundwood products.

Dead removals.—Net volume of dead trees harvested for industrial roundwood products.

Diameter at breast height (d.b.h.).—The outside bark diameter at 4.5 feet above the forest floor on the uphill side of the tree. For determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

Fine mill residue.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide.

Growing-stock removals.—The growing-stock volume removed from the timberland inventory by harvesting industrial roundwood products. (Note: Includes sawtimber removals, poletimber removals, and logging residues.)

Growing-stock tree.—A live timberland tree of commercial species that meets specified standards of size, quality, and merchantability. (Note: Excludes rough, rotten, and dead trees.)

Growing-stock volume.—Net volume of growing-stock trees 5.0 inches d.b.h. and over, from 1 foot above the ground to a minimum 4.0-inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

Hardwoods.—Dicotyledonous trees, usually broad-leaved and deciduous.

Harvest residues.—The total net volume of unused portions of trees cut or killed by logging. (Note: Includes both logging residues and logging slash.)

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for fuel, pulp, or board products.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood receipts.—The quantity of industrial roundwood received by commercial mills in a geographic area.

International 1/4-inch rule.—A log rule or formula for estimating the board foot volume of logs, allowing 1/2-inch of taper for each 4-foot length. The rule appears in a number of forms that allow for kerf. In this form, a 1/4-inch of kerf is assumed. This rule is used as the USDA Forest Service standard log rule in the Eastern United States.

Limbwood removals.—Net volume of all portions of a tree other than the central stem, (including forks, large limbs, tops, and stumps) harvested for industrial roundwood products.

Logging residue.—Net volume of unused portions of the merchantable central stem of growing-stock trees cut or killed by logging.

Logging slash.—Net volume of unused portions of the unmerchantable (non-growing-stock) sections of trees cut or killed by logging.

Merchantable sections.—Sections of the central stem of growing-stock trees that meet either pulpwood or saw-log specifications.

Net volume.—Gross volume less deductions for rot, sweep, or other defects affecting use for roundwood products.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial roundwood products. Classified in volume tables as rough trees.

Nonforest land.—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 39.9-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, improved roads and nonforest strips must be more than 120 feet wide and more than 1 acre to qualify as nonforest land.)

Nonforest land removals.—Net volume of trees on nonforest lands harvested for industrial roundwood products.

Poletimber.—A growing-stock tree at least 5.0 inches d.b.h. but smaller than sawtimber size (9.0 inches d.b.h. for softwoods, 11.0 inches d.b.h. for hardwoods).

Poletimber removals.—Net volume in the merchantable central stem of poletimber trees harvested for industrial roundwood products.

Primary wood-using mills.—Mills receiving roundwood or chips from roundwood for processing into products.

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark generated at manufacturing plants from roundwood processed into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some byproduct.

Rotten tree.—A tree that does not meet regional merchantability standards because of excessive unsound cull.

Rough tree.—A tree that does not meet regional merchantability standards because of excessive sound cull. Includes noncommercial tree species.

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

Sapling.—A live tree between 1.0 and 5.0 inches d.b.h.

Sapling removals.—Net volume in saplings harvested for industrial roundwood products.

Saw-log portion.—That portion of the central stem of sawtimber trees between the stump and the saw-log top.

Saw-log top.—The point on the central stem of sawtimber trees above which a saw log cannot be produced. The minimum saw-log top is 7.0 inches d.o.b. for softwoods and 9.0 inches d.o.b. for hardwoods.

Sawtimber removals.—As used in table 10, sawtimber removals refers to the net volume in the merchantable central stem of sawtimber trees harvested for industrial roundwood products. (Note: Includes the saw-log and upper-stem portions of sawtimber trees.) In the case of sawtimber volume removed from timberland inventory as in table 12, sawtimber removals refers to the net volume in the saw-log portion of sawtimber trees harvested for roundwood products or left on the ground as harvest residue, and is usually expressed in thousands of board feet (International 1/4-inch rule).

Sawtimber tree.—A growing-stock tree containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. and hardwoods must be at least 11.0 inches d.b.h.

Softwoods.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

Tree.—A woody plant usually having one or more perennial stems, a more or less definitely formed crown of foliage, and a height of at least 12 feet at maturity.

Timberland.—Forest land that is producing, or is capable of producing, in excess of 20 cubic feet per acre per year of industrial roundwood products under natural conditions, is not withdrawn from timber utilization by statute or administrative regulation, and is not associated with urban or rural development.

Timber product output.—The volume of roundwood products produced from an area's forests.

Timber removals.—The total net volume of trees removed for industrial roundwood products or left on the ground as harvest residues.

Upper stem portion.—That portion of the central stem of sawtimber trees between the saw-log top and the minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

Veneer log.—Logs to be used in the production of plywood, finished panels, or veneer sheets, both rotary cut and sliced.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED IN THIS REPORT

SOFTWOODS

Eastern redcedar ..... *Juniperus virginiana*
Red pine ..... *Pinus resinosa*
Eastern white pine ..... *Pinus strobus*

HARDWOODS

Ash
- White ash ..... *Fraxinus americana*
- Black ash ..... *Fraxinus nigra*
- Green ash ..... *Fraxinus pennsylvanica*

Aspen
Balsam poplar ..... *Populus balsamifera*
Bigtooth aspen ..... *Populus grandidentata*
Quaking aspen ..... *Populus tremuloides*
Basswood ..... *Tilia americana*
Birch
Paper birch ..... *Betula papyrifera*
River birch ..... *Betula nigra*
Black cherry ..... *Prunus serotina*
Black locust ..... *Robinia pseudoacacia*
Black walnut ..... *Juglans nigra*
Butternut ..... *Juglans cinerea*
Cottonwood ..... *Populus deltoides*
Elm
American elm ..... *Ulmus americana*
Slippery elm ..... *Ulmus rubra*
Hackberry ..... *Celtis occidentalis*
Hickory
Shellbark hickory ..... *Carya laciniosa*
Shagbark hickory ..... *Carya ovata*
Mockernut hickory ..... *Carya tomentosa*
Bitternut hickory ..... *Carya cordiformis*
Honeylocust ..... *Gleditsia triacanthos*
Hard maple
Black maple ..... *Acer nigrum*
Sugar maple ..... *Acer saccharum*
Soft maple
Red maple ..... *Acer rubrum*
Silver maple ..... *Acer saccharinum*
Red oak
Northern red oak ..... *Quercus rubra*
Northern pin oak ..... *Quercus ellipsoidalis*
Shingle oak ..... *Quercus imbricaria*
Pin oak ..... *Quercus palustris*
Black oak ..... *Quercus velutina*
White oak
White oak ..... *Quercus alba*
Swamp white oak ..... *Quercus bicolor*
Bur oak ..... *Quercus macrocarpa*
Chinkapin oak ..... *Quercus muehlenbergii*
Overcup oak ..... *Quercus lyrata*
Post oak ..... *Quercus stellata*
Sycamore ..... *Platanus occidentalis*
Tupelo
Black gum ..... *Nyssa sylvatica* var. *biflora*
Black willow ..... *Salix nigra*

Table Titles

Table 1.—Number of active primary wood-using plants, Iowa, 1972, 1980, 1988, 1994

Table 2.—Industrial roundwood receipts by species group and State of origin, Iowa, 1994

Table 3.—Industrial roundwood production by type of product and hardwoods and softwoods, Iowa, 1972, 1980, 1988, 1994

Table 4.—Industrial roundwood production by Forest Survey Unit, species group, and type of product, Iowa, 1994

Table 5.—Industrial roundwood production by Forest Survey Unit, county, and species group, Iowa, 1994

Table 6.—Industrial roundwood production by Forest Survey Unit, species group, and State of destination, Iowa, 1994

Table 7.—Saw-log production by species group, Iowa, 1972, 1980, 1988, 1994

Table 8.—Veneer-log production by species group, Iowa, 1972, 1980, 1988, 1994

Table 9.—Pulpwood production by species group, Iowa, 1972, 1980, 1988, 1994

Table 10.—Material harvested for industrial roundwood by source of material and species group, Iowa, 1994

Table 11.—Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Iowa, 1994

Table 12.—Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Iowa, 1994

Table 13.—Residue generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Iowa, 1994

Table 14.—Residues produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Iowa, 1994

Table 1.--Number of active primary wood-using plants, Iowa, 1972, 1980, 1988, and 1994

Kind of mill and mill size	1972	1980	1988	1994
Sawmills				
Large 1/	--	2	3	5
Medium 2/	48	20	27	22
Small 3/	12	19	35	42
Total	60	41	65	69
Cooperage mills	1	1	--	--
Veneer mills	2	1	1	1
Pulp mills	2	2	1	1
All mills	65	45	67	71

1/ Annual lumber production in excess of 5 million board feet.
2/ Annual lumber production from 1 million to 5 million board feet.
3/ Annual lumber production less than 1 million board feet.

Table 2.--Industrial roundwood receipts by species group and State of origin, Iowa, 1994

(In thousand cubic feet)

Species group	Total	State of origin					
		Illinois	Iowa	Minnesota	Missouri	Nebraska	Wisconsin
SOFTWOODS							
Eastern redcedar	10	--	10	--	--	--	--
Red pine	1	--	1	--	--	--	--
White pine	10	--	10	--	--	--	--
Total	21	--	21	--	--	--	--
HARDWOODS							
Soft maple	2,889	246	2,352	11	231	--	49
Hard maple	765	54	613	9	4	--	84
River birch	25	3	21	--	1	--	--
Hickory	428	151	210	5	17	--	45
Hackberry	185	8	160	3	4	--	10
Ash	537	50	411	3	16	--	56
Honeylocust	5	--	5	--	--	--	--
Butternut	4	--	4	--	--	--	--
Black walnut	1,459	41	1,079	1	215	63	60
Tupelo	5	--	--	--	5	--	--
Sycamore	67	14	44	--	8	--	--
Cottonwood	3,259	551	2,370	108	175	5	50
Aspen	93	--	55	17	--	--	21
Black cherry	113	10	92	--	(1/)	--	11
Red oak	4,384	416	2,980	108	213	--	668
White oak	3,085	287	2,287	41	182	1	288
Black locust	3	--	3	--	--	--	--
Willow	33	--	20	3	--	--	9
Basswood	843	31	639	43	7	--	123
Elm	471	132	291	1	25	--	21
Other hardwoods	2	--	2	--	--	--	--
Total	18,653	1,994	13,639	353	1,102	70	1,495
All species	18,674	1,994	13,661	353	1,102	70	1,495

1/ Less than 500 cubic feet.

Table 3.--Industrial roundwood production by type of product and hardwoods and softwoods, Iowa, 1972, 1980, 1988, 1994

(In thousand cubic feet)

	Softwoods				Hardwoods				All species			
Product	1972	1980 2/	1988 2/	1994	1972	1980 2/	1988 2/	1994	1972	1980 2/	1988 2/	1994
Saw logs	17	(3/)	3	21	8,987	10,621	10,816	14,886	9,004	10,621	10,819	14,907
Cooperage logs	--	--	--	--	102	558	--	69	102	558	--	69
Veneer logs	--	--	--	--	1,157	712	522	572	1,157	712	522	572
Pulpwood	--	--	--	--	2,441	1,320	1,225	814	2,441	1,320	1,225	814
Miscellaneous 1/	--	--	--	--	232	--	--	--	232	--	--	--
Total	17	(3/)	3	21	12,919	13,211	12,563	16,340	12,936	13,211	12,566	16,362

1/ Includes plants producing shavings, chips, etc.

2/ Data for 1980 and 1988 are estimates based on trend data and related studies.

3/ Less than 500 cubic feet.

Table 4.--Industrial roundwood production by Forest Survey Unit, species group, and type of product, Iowa, 1994 1/

ALL UNITS

Species group	Saw logs		Veneer logs		Pulpwood		Cooperage		All products
	MBF 2/	MCF 3/	MBF 2/	MCF 3/	Cords 4/	MCF 3/	MBF 2/	MCF 3/	MCF 3/
SOFTWOODS									
Eastern redcedar	37	10	--	--	--	--	--	--	10
Red pine	7	1	--	--	--	--	--	--	1
White pine	58	10	--	--	--	--	--	--	10
Total	102	21	--	--	--	--	--	--	21
HARDWOODS									
Soft maple	13,889	2,288	81	19	1,754	139	--	--	2,445
Hard maple	4,721	778	51	12	146	12	--	--	801
River birch	78	13	--	--	108	9	--	--	21
Hickory	1,158	191	1	(5/)	372	29	--	--	220
Hackberry	985	162	--	--	--	--	--	--	162
Ash	2,491	410	2	1	541	43	--	--	454
Honeylocust	35	6	--	--	--	--	--	--	6
Butternut	25	4	--	--	--	--	--	--	4
Black walnut	5,769	1,263	902	127	--	--	--	--	1,390
Sycamore	248	41	--	--	61	5	--	--	46
Cottonwood	19,644	2,778	84	19	4,634	366	--	--	3,163
Aspen	381	63	1	(5/)	--	--	--	--	63
Black cherry	647	107	46	10	9	1	--	--	118
Red oak	18,235	3,246	340	78	1,372	108	--	--	3,432
White oak	14,057	2,502	1,165	266	702	55	416	69	2,893
Black locust	18	3	--	--	--	--	--	--	3
Willow	124	20	--	--	--	--	--	--	20
Basswood	4,417	728	156	36	49	4	--	--	767
Elm	1,684	277	18	4	548	43	--	--	325
Other hardwoods	48	8	--	--	--	--	--	--	8
Total	88,655	14,886	2,848	572	10,298	814	416	69	16,340
All species	88,757	14,907	2,848	572	10,298	814	416	69	16,362

(Table 4 continued on next page)

(Table 4 continued)

NORTHEAST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Cooperage		All products
	MBF 2/	MCF 3/	MBF 2/	MCF 3/	Cords 4/	MCF 3/	MBF 2/	MCF 3/	MCF 3/
SOFTWOODS									
Eastern redcedar	13	3	--	--	--	--	--	--	3
Total	13	3	--	--	--	--	--	--	3
Hardwoods									
Soft maple	3,503	577	81	19	1,541	122	--	--	717
Hard maple	4,580	754	51	12	127	10	--	--	776
River birch	26	4	--	--	43	3	--	--	8
Hickory	549	90	1	(5/)	333	26	--	--	117
Hackberry	445	73	--	--	--	--	--	--	73
Ash	1,571	259	2	1	349	28	--	--	287
Butternut	24	4	--	--	--	--	--	--	4
Black walnut	2,915	638	766	108	--	--	--	--	746
Sycamore	32	5	--	--	61	5	--	--	10
Cottonwood	3,107	439	42	10	3,905	308	--	--	757
Aspen	381	63	1	(5/)	--	--	--	--	63
Black cherry	477	79	42	10	--	--	--	--	88
Red oak	12,370	2,202	340	78	603	48	--	--	2,327
White oak	8,166	1,454	1,062	243	331	26	416	69	1,791
Black locust	18	3	--	--	--	--	--	--	3
Willow	72	12	--	--	--	--	--	--	12
Basswood	3,386	558	156	36	--	--	--	--	593
Elm	1,332	219	18	4	478	38	--	--	261
Other hardwoods	32	5	--	--	--	--	--	--	5
Total	42,984	7,438	2,562	519	7,770	614	416	69	8,639
All species	42,996	7,442	2,562	519	7,770	614	416	69	8,643

NORTHWEST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Cooperage		All products
	MBF 2/	MCF 3/	MBF 2/	MCF 3/	Cords 4/	MCF 3/	MBF 2/	MCF 3/	MCF 3/
HARDWOODS									
Soft maple	22	4	--	--	--	--	--	--	4
Black walnut	3	1	--	--	--	--	--	--	1
Cottonwood	1,363	193	--	--	--	--	--	--	193
Red oak	6	1	--	--	--	--	--	--	1
White oak	226	40	--	--	--	--	--	--	40
Basswood	26	4	--	--	--	--	--	--	4
Other hardwoods	1	(5/)	--	--	--	--	--	--	(5/)
Total	1,646	243	--	--	--	--	--	--	243
All species	1,646	243	--	--	--	--	--	--	243

(Table 4 continued on next page)

(Table 4 continued)

SOUTHEAST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Cooperage		All products
	MBF 2/	MCF 3/	MBF 2/	MCF 3/	Cords 4/	MCF 3/	MBF 2/	MCF 3/	MCF 3/
SOFTWOODS									
Eastern redcedar	18	5	--	--	--	--	--	--	5
Red pine	7	1	--	--	--	--	--	--	1
White pine	57	10	--	--	--	--	--	--	10
Total	82	16	--	--	--	--	--	--	16
HARDWOODS									
Soft maple	10,054	1,656	--	--	212	17	--	--	1,673
Hard maple	141	23	(5/)	(5/)	20	2	--	--	25
River birch	52	9	--	--	66	5	--	--	14
Hickory	600	99	--	--	39	3	--	--	102
Hackberry	516	85	--	--	--	--	--	--	85
Ash	862	142	--	--	193	15	--	--	157
Honeylocust	25	4	--	--	--	--	--	--	4
Butternut	1	(5/)	--	--	--	--	--	--	(5/)
Black walnut	2,177	476	137	19	--	--	--	--	496
Sycamore	216	36	--	--	--	--	--	--	36
Cottonwood	10,203	1,443	--	--	729	58	--	--	1,500
Black cherry	167	28	3	1	9	1	--	--	29
Red oak	5,772	1,027	--	--	770	61	--	--	1,088
White oak	5,518	982	103	24	370	29	--	--	1,035
Willow	52	9	--	--	--	--	--	--	9
Basswood	982	162	--	--	49	4	--	--	166
Elm	289	48	1	(5/)	70	6	--	--	53
Other hardwoods	6	1	--	--	--	--	--	--	1
Total	37,633	6,229	244	44	2,528	200	--	--	6,472
All species	37,715	6,245	244	44	2,528	200	--	--	6,488

SOUTHWEST UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Cooperage		All products
	MBF 2/	MCF 3/	MBF 2/	MCF 3/	Cords 4/	MCF 3/	MBF 2/	MCF 3/	MCF 3/
SOFTWOODS									
Eastern redcedar	6	2	--	--	--	--	--	--	2
White pine	1	(5/)	--	--	--	--	--	--	(5/)
Total	7	2	--	--	--	--	--	--	2
HARDWOODS									
Soft maple	310	51	--	--	--	--	--	--	51
Hickory	10	2	--	--	--	--	--	--	2
Hackberry	25	4	--	--	--	--	--	--	4
Ash	58	10	--	--	--	--	--	--	10
Honeylocust	10	2	--	--	--	--	--	--	2
Black walnut	674	148	--	--	--	--	--	--	148
Cottonwood	4,972	703	42	10	--	--	--	--	713
Black cherry	3	(5/)	--	--	--	--	--	--	(5/)
Red oak	87	16	--	--	--	--	--	--	16
White oak	147	26	--	--	--	--	--	--	26
Basswood	23	4	--	--	--	--	--	--	4
Elm	63	10	--	--	--	--	--	--	10
Other hardwoods	10	2	--	--	--	--	--	--	2
Total	6,392	977	42	10	--	--	--	--	986
All species	6,400	979	42	10	--	--	--	--	988

1/ Excludes removals for fuelwood and posts.

2/ Thousand board feet International 1/4-inch rule.

3/ Thousand cubic feet.

4/ Standard cords, unpeeled. A standard cord contains 128 cubic feet including wood, bark, and air space. Average solid wood is 79 cubic feet per standard cord.

5/ Less than 1/2 unit of measure.

Table 5.-- Industrial roundwood production by Forest Survey Unit, county, and species group, Iowa, 1994

(In thousand cubic feet)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
NORTHEAST UNIT												
Allamakee	--	--	--	59	185	--	18	5	43	--	(1/)	136
Benton	1	--	--	26	(1/)	--	(1/)	2	2	--	(1/)	6
Black Hawk	(1/)	--	--	1	(1/)	--	--	(1/)	1	--	(1/)	1
Bremer	--	--	--	15	14	--	3	6	6	--	--	2
Buchanan	1	--	--	5	(1/)	--	--	(1/)	1	--	(1/)	1
Butler	--	--	--	2	7	--	1	3	2	--	--	--
Cedar	--	--	--	8	14	(1/)	2	1	3	--	--	29
Chickasaw	--	--	--	2	7	--	1	3	5	--	--	(1/)
Clayton	--	--	--	47	291	--	28	13	72	--	1	192
Clinton	--	--	--	4	3	--	1	1	3	--	--	1
Delaware	--	--	--	15	20	(1/)	2	4	26	--	(1/)	78
Dubuque	--	--	--	130	38	3	29	1	27	--	--	28
Fayette	--	--	--	11	99	--	6	7	32	--	1	96
Floyd	--	--	--	1	3	--	1	2	1	--	--	1
Grundy	--	--	--	--	--	--	--	--	--	--	--	--
Howard	--	--	--	1	--	--	--	--	6	--	--	(1/)
Jackson	--	--	--	31	14	(1/)	6	3	6	--	--	21
Johnson	--	--	--	24	(1/)	2	5	5	3	--	--	26
Jones	--	--	--	17	23	(1/)	3	3	9	--	--	41
Linn	(1/)	--	--	53	(1/)	--	(1/)	1	7	--	(1/)	28
Mitchell	--	--	--	(1/)	--	--	--	--	--	--	--	(1/)
Scott	--	--	--	29	(1/)	2	5	5	4	--	--	(1/)
Tama	1	--	--	218	(1/)	--	2	6	5	--	(1/)	36
Winneshiek	--	--	--	20	56	--	3	(1/)	20	--	--	23
Total	3	--	--	717	776	8	117	73	287	--	4	746
NORTHWEST UNIT												
Cerro Gordo	--	--	--	--	--	--	--	--	--	--	--	--
Emmet	--	--	--	--	--	--	--	--	--	--	--	--
Franklin	--	--	--	--	--	--	--	--	--	--	--	--
Humboldt	--	--	--	(1/)	--	--	--	--	--	--	--	--
Kossuth	--	--	--	--	--	--	--	--	--	--	--	--
Lyon	--	--	--	--	--	--	--	--	--	--	--	--
Plymouth	--	--	--	--	--	--	--	--	--	--	--	--
Sioux	--	--	--	--	--	--	--	--	--	--	--	--
Winnebago	--	--	--	--	--	--	--	--	--	--	--	--
Worth	--	--	--	3	--	--	--	--	--	--	--	1
Wright	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	4	--	--	--	--	--	--	--	1

(Table 5 continued on next page)

(Table 5 continued)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
SOUTHEAST UNIT												
Appanoose	--	--	--	58	--	--	3	2	4	--	--	11
Boone	1	--	(1/)	45	3	--	(1/)	1	4	--	--	7
Clarke	1	--	--	10	--	--	--	(1/)	(1/)	--	--	4
Dallas	1	--	(1/)	20	(1/)	--	(1/)	(1/)	2	(1/)	--	1
Davis	--	--	1	34	--	--	2	1	5	--	--	16
Decatur	--	--	--	2	--	--	(1/)	(1/)	(1/)	(1/)	--	6
Des Moines	--	--	--	94	3	2	8	5	17	--	--	14
Guthrie	--	--	--	(1/)	--	--	(1/)	(1/)	(1/)	(1/)	--	--
Hamilton	--	--	--	8	1	--	--	--	1	--	--	1
Hardin	--	--	--	4	2	--	2	7	2	--	--	1
Henry	(1/)	(1/)	(1/)	75	(1/)	3	12	8	11	--	--	41
Iowa	--	--	--	70	(1/)	1	6	9	5	--	--	45
Jasper	(1/)	--	--	20	(1/)	--	--	1	(1/)	--	(1/)	11
Jefferson	(1/)	(1/)	(1/)	84	(1/)	(1/)	4	(1/)	8	--	--	35
Keokuk	1	(1/)	(1/)	144	(1/)	3	13	12	13	--	--	42
Lee	(1/)	(1/)	(1/)	434	3	2	15	3	21	--	--	65
Louisa	--	--	--	43	(1/)	(1/)	3	(1/)	10	--	--	46
Lucas	1	--	--	19	--	--	--	1	1	--	--	12
Madison	--	--	--	--	--	--	--	--	--	--	--	--
Mahaska	--	--	--	95	(1/)	--	6	3	6	--	--	5
Marion	--	--	--	21	3	--	3	7	4	--	--	4
Marshall	--	--	--	8	2	--	2	6	2	--	--	(1/)
Monroe	--	--	--	19	(1/)	--	1	1	4	--	--	13
Muscatine	--	--	--	54	3	2	6	7	4	3	--	3
Polk	--	--	--	23	--	--	--	--	(1/)	--	--	1
Poweshiek	--	--	--	5	(1/)	(1/)	1	(1/)	(1/)	--	--	9
Story	--	--	--	2	(1/)	--	--	--	(1/)	--	--	1
Van Buren	(1/)	--	--	58	(1/)	1	5	1	12	--	--	30
Wapello	--	--	7	74	(1/)	--	2	1	6	--	--	17
Warren	--	--	--	10	--	--	--	--	--	--	--	--
Washington	--	--	--	95	(1/)	1	8	5	9	--	--	40
Wayne	--	--	--	20	--	--	--	1	1	--	--	11
Webster	--	--	--	25	2	--	--	--	3	--	--	5
Total	5	1	10	1,673	25	14	102	85	157	4	(1/)	496
SOUTHWEST UNIT												
Cass	--	--	--	--	--	--	--	--	--	--	--	19
Crawford	--	--	--	--	--	--	--	--	--	--	--	--
Fremont	--	--	--	--	--	--	--	2	--	--	--	--
Greene	1	--	(1/)	19	--	--	--	--	1	--	--	1
Harrison	--	--	--	10	--	--	(1/)	(1/)	7	(1/)	--	28
Mills	(1/)	--	--	(1/)	--	--	--	--	--	--	--	24
Monona	--	--	--	--	--	--	--	(1/)	--	--	--	3
Montgomery	--	--	--	(1/)	--	--	--	--	--	--	--	19
Page	--	--	--	(1/)	--	--	--	--	--	--	--	(1/)
Pottawattamie	(1/)	--	--	19	--	--	1	1	1	1	--	24
Ringgold	--	--	--	3	--	--	--	--	--	--	--	2
Shelby	--	--	--	--	--	--	--	--	--	--	--	19
Taylor	--	--	--	--	--	--	--	--	--	--	--	2
Union	--	--	--	--	--	--	--	--	--	--	--	7
Woodbury	(1/)	--	--	--	--	--	--	--	1	--	--	(1/)
Total	2	--	(1/)	51	--	--	2	4	10	2	--	148
State total	10	1	10	2,445	801	21	220	162	454	6	4	1,390

(Table 5 continued on next page)

(Table 5 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
NORTHEAST UNIT												
Allamakee	--	44	23	16	483	381	--	5	148	44	2	1,593
Benton	(1/)	38	--	(1/)	17	16	--	2	1	1	--	113
Black Hawk	(1/)	1	--	(1/)	10	5	--	(1/)	1	1	--	23
Bremer	--	5	5	--	22	37	--	--	3	1	--	118
Buchanan	(1/)	4	--	(1/)	16	14	--	(1/)	1	1	(1/)	45
Butler	--	5	2	--	10	17	--	--	--	--	--	51
Cedar	(1/)	12	--	2	56	24	--	--	8	4	--	164
Chickasaw	--	2	2	--	17	35	--	--	1	3	--	79
Clayton	--	16	12	27	714	442	--	1	153	51	2	2,063
Clinton	--	11	--	1	8	7	--	--	3	1	--	45
Delaware	--	11	--	9	128	82	--	--	66	31	(1/)	472
Dubuque	5	308	--	5	218	123	--	--	26	38	1	981
Fayette	--	37	9	6	228	176	--	1	79	28	1	818
Floyd	--	1	1	(1/)	5	15	--	--	--	--	--	32
Grundy	--	4	--	--	--	--	--	--	--	--	--	4
Howard	--	7	1	--	18	48	--	--	4	8	--	92
Jackson	(1/)	(1/)	--	8	40	46	--	--	20	4	--	200
Johnson	2	69	--	(1/)	39	43	--	--	2	2	--	221
Jones	(1/)	12	--	6	63	30	--	--	16	12	--	234
Linn	(1/)	3	--	2	32	38	1	(1/)	4	3	--	174
Mitchell	--	3	--	--	--	--	--	--	--	--	--	4
Scott	2	59	--	1	34	41	--	--	3	2	--	187
Tama	--	78	--	(1/)	20	17	2	2	5	4	--	397
Winneshiek	--	27	8	2	145	154	--	1	51	24	--	535
Total	10	757	63	88	2,327	1,791	3	12	593	261	5	8,643
NORTHWEST UNIT												
Cerro Gordo	--	1	--	--	(1/)	(1/)	--	--	--	--	--	1
Emmet	--	1	--	--	--	--	--	--	--	--	--	1
Franklin	--	4	--	--	--	25	--	--	--	--	--	28
Humboldt	--	11	--	--	(1/)	7	--	--	2	--	--	20
Kossuth	--	74	--	--	--	7	--	--	2	--	--	83
Lyon	--	4	--	--	--	--	--	--	--	--	--	4
Plymouth	--	82	--	--	--	--	--	--	--	--	--	82
Sioux	--	4	--	--	--	--	--	--	--	--	--	4
Winnebago	--	1	--	--	--	--	--	--	--	--	(1/)	1
Worth	--	10	--	--	(1/)	2	--	--	--	--	--	16
Wright	--	4	--	--	--	--	--	--	--	--	--	4
Total	--	193	--	--	1	40	--	--	4	--	(1/)	243

(Table 5 continued on next page)

(Table 5 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
SOUTHEAST UNIT												
Appanoose	(1/)	31	--	(1/)	31	40	--	--	3	(1/)	--	185
Boone	--	27	--	1	39	15	--	--	18	1	--	162
Clarke	--	37	--	(1/)	5	8	--	--	--	--	--	66
Dallas	--	19	--	(1/)	3	2	--	--	(1/)	--	(1/)	51
Davis	(1/)	30	--	(1/)	28	64	--	--	3	(1/)	--	185
Decatur	--	17	--	(1/)	(1/)	2	--	--	(1/)	--	(1/)	28
Des Moines	3	72	--	1	76	47	--	1	9	5	(1/)	355
Guthrie	--	5	--	--	--	--	--	--	(1/)	--	(1/)	6
Hamilton	--	12	--	(1/)	10	4	--	--	7	(1/)	--	44
Hardin	--	12	--	--	4	4	--	--	2	(1/)	--	41
Henry	3	130	--	1	88	90	--	--	12	4	(1/)	479
Iowa	3	72	--	2	34	43	--	3	9	5	--	308
Jasper	--	22	--	1	7	4	--	--	2	1	--	69
Jefferson	2	46	--	1	30	39	--	--	2	1	--	253
Keokuk	4	154	--	2	103	105	--	1	7	6	--	609
Lee	7	190	--	5	126	94	--	1	22	6	(1/)	996
Louisa	1	32	--	1	32	32	--	--	6	4	--	210
Lucas	--	15	--	(1/)	15	23	--	--	(1/)	--	--	88
Madison	--	(1/)	--	--	--	--	--	--	--	--	--	(1/)
Mahaska	3	76	--	1	52	53	--	1	4	3	--	308
Marion	--	61	--	1	38	26	--	--	4	(1/)	--	172
Marshall	--	22	--	(1/)	5	5	--	(1/)	2	1	--	57
Monroe	--	42	--	1	47	41	--	--	3	1	--	172
Muscatine	5	71	--	3	73	59	--	--	6	5	--	304
Polk	--	10	--	(1/)	(1/)	20	--	--	--	(1/)	--	54
Poweshiek	(1/)	41	--	1	32	25	--	(1/)	1	(1/)	--	117
Story	--	4	--	--	2	1	--	--	--	--	--	10
Van Buren	1	44	--	2	59	53	--	--	16	3	(1/)	286
Wapello	2	68	--	1	61	62	--	--	4	1	--	306
Warren	--	29	--	--	--	(1/)	--	--	--	--	--	39
Washington	2	87	--	1	44	46	--	1	7	4	--	350
Wayne	--	11	--	(1/)	13	21	--	--	1	--	--	80
Webster	--	12	--	1	29	7	--	--	16	1	--	99
Total	36	1,500	--	29	1,088	1,035	--	9	166	53	1	6,488
SOUTHWEST UNIT												
Cass	--	--	--	--	--	(1/)	--	--	--	--	--	19
Crawford	--	4	--	--	--	1	--	--	--	--	--	5
Fremont	--	5	--	--	2	2	--	--	--	--	--	12
Greene	--	5	--	--	2	2	--	--	(1/)	1	--	31
Harrison	--	507	--	--	1	9	--	--	(1/)	9	(1/)	574
Mills	--	15	--	--	3	3	--	--	--	(1/)	--	46
Monona	--	94	--	--	1	4	--	--	--	(1/)	--	102
Montgomery	--	--	--	--	(1/)	(1/)	--	--	--	(1/)	--	20
Page	--	1	--	(1/)	(1/)	1	--	--	--	(1/)	--	3
Pottawattamie	--	4	--	--	3	1	--	--	1	--	1	58
Ringgold	--	1	--	--	(1/)	2	--	--	(1/)	--	--	8
Shelby	--	--	--	--	--	(1/)	--	--	--	--	--	19
Taylor	--	--	--	--	--	--	--	--	1	--	--	3
Union	--	--	--	--	--	--	--	--	--	--	--	7
Woodbury	--	78	--	(1/)	1	(1/)	--	--	--	--	--	81
Total	--	713	--	(1/)	16	26	--	--	4	10	2	988
State total	46	3,163	63	118	3,432	2,893	3	20	767	325	8	16,362

1/ Less than 500 cubic feet.

Table 6.--Industrial roundwood production by Forest Survey Unit, species group, and State of destination, Iowa, 1994

(In thousand cubic feet)

ALL UNITS

Species group	Total	State of destination										Other countries
		Illinois	Indiana	Iowa	Kansas	Minnesota	Missouri	Nebraska	Ohio	S. Dakota	Wisconsin	
SOFTWOODS												
Eastern redcedar	10	--	--	10	--	--	--	--	--	--	--	--
Red pine	1	--	--	1	--	--	--	--	--	--	--	--
White pine	10	--	--	10	--	--	--	--	--	--	--	--
Total	21	--	--	21	--	--	--	--	--	--	--	--
HARDWOODS												
Soft maple	2,445	--	1	2,352	--	--	54	3	--	--	35	--
Hard maple	801	--	3	613	--	10	--	--	3	--	172	--
River birch	21	--	--	21	--	--	--	--	--	--	--	--
Hickory	220	--	(1/)	210	--	3	4	--	--	--	3	--
Hackberry	162	--	--	160	--	--	--	2	--	--	(1/)	--
Ash	454	9	3	411	--	3	1	7	--	--	20	--
Honeylocust	6	--	--	5	--	--	1	--	--	--	--	--
Butternut	4	--	--	4	--	--	--	--	--	--	--	--
Black walnut	1,390	36	58	1,079	74	2	74	4	13	--	36	14
Sycamore	46	--	--	44	--	--	1	--	--	--	--	--
Cottonwood	3,163	10	--	2,370	--	--	16	746	--	11	10	--
Aspen	63	--	--	55	--	3	--	--	--	--	5	--
Black cherry	118	16	(1/)	92	--	--	--	--	--	--	9	--
Red oak	3,432	49	5	2,980	--	91	24	5	--	--	278	--
White oak	2,893	42	59	2,287	--	130	21	14	1	--	319	20
Black locust	3	--	--	3	--	--	--	--	--	--	--	--
Willow	20	--	--	20	--	--	--	--	--	--	--	--
Basswood	767	--	2	639	--	18	4	2	--	--	103	--
Elm	325	2	(1/)	291	--	3	1	9	2	--	15	1
Other hardwoods	8	5	1	2	--	--	--	--	--	--	--	--
Total	16,340	169	133	13,639	74	262	202	792	19	11	1,005	34
All species	16,362	169	133	13,661	74	262	202	792	19	11	1,005	34

(Table 6 continued on next page)

(Table 6 continued)

NORTHEAST UNIT

Species group	Total	State of destination										Other countries
		Illinois	Indiana	Iowa	Kansas	Minnesota	Missouri	Nebraska	Ohio	S. Dakota	Wisconsin	
SOFTWOODS												
Eastern redcedar	3	--	--	3	--	--	--	--	--	--	--	--
	3	--	--	3	--	--	--	--	--	--	--	--
Soft maple	717	--	(1/)	682	--	--	--	--	--	--	35	--
Hard maple	776	--	3	588	--	10	--	--	2	--	172	--
River birch	8	--	--	8	--	--	--	--	--	--	--	--
Hickory	117	--	(1/)	111	--	3	--	--	--	--	3	--
Hackberry	73	--	--	73	--	--	--	--	--	--	(1/)	--
Ash	287	5	2	258	--	3	--	--	--	--	20	--
Butternut	4	--	--	4	--	--	--	--	--	--	--	--
Black walnut	746	23	49	568	45	2	--	--	11	--	36	12
Sycamore	10	--	--	10	--	--	--	--	--	--	--	--
Cottonwood	757	1	--	746	--	--	--	--	--	--	10	--
Aspen	63	--	--	55	--	3	--	--	--	--	5	--
Black cherry	88	13	(1/)	65	--	--	--	--	--	--	9	--
Red oak	2,327	35	4	1,919	--	91	--	--	--	--	278	--
White oak	1,791	29	41	1,253	--	130	--	--	1	--	319	17
Black locust	3	--	--	3	--	--	--	--	--	--	--	--
Willow	12	--	--	12	--	--	--	--	--	--	--	--
Basswood	593	--	2	471	--	18	--	--	--	--	103	--
Elm	261	2	(1/)	238	--	3	--	--	2	--	15	1
Other hardwoods	5	4	1	--	--	--	--	--	--	--	--	--
Total	8,639	114	103	7,064	45	262	--	--	16	--	1,005	30
All species	8,643	114	103	7,068	45	262	--	--	16	--	1,005	30

NORTHWEST UNIT

Species group	Total	State of destination										Other countries
		Illinois	Indiana	Iowa	Kansas	Minnesota	Missouri	Nebraska	Ohio	S. Dakota	Wisconsin	
HARDWOODS												
Soft maple	4	--	--	4	--	--	--	--	--	--	--	--
Black walnut	1	--	--	1	--	--	--	--	--	--	--	--
Cottonwood	193	--	--	104	--	--	--	78	--	11	--	--
Red oak	1	--	--	1	--	--	--	--	--	--	--	--
White oak	40	--	--	40	--	--	--	--	--	--	--	--
Basswood	4	--	--	4	--	--	--	--	--	--	--	--
Other hardwoods	(1/)	--	(1/)	--	--	--	--	--	--	--	--	--
Total	243	--	(1/)	154	--	--	--	78	--	11	--	--
All species	243	--	(1/)	154	--	--	--	78	--	11	--	--

(Table 6 continued on next page)

(Table 6 continued)

SOUTHEAST UNIT

Species group	Total	State of destination										Other countries
		Illinois	Indiana	Iowa	Kansas	Minnesota	Missouri	Nebraska	Ohio	S. Dakota	Wisconsin	
SOFTWOODS												
Eastern redcedar	5	--	--	5	--	--	--	--	--	--	--	--
Red pine	1	--	--	1	--	--	--	--	--	--	--	--
White pine	10	--	--	10	--	--	--	--	--	--	--	--
	16	--	--	16	--	--	--	--	--	--	--	--
HARDWOODS												
Soft maple	1,673	--	1	1,618	--	--	54	--	--	--	--	--
Hard maple	25	--	(1/)	25	--	--	--	--	(1/)	--	--	--
River birch	14	--	--	14	--	--	--	--	--	--	--	--
Hickory	102	--	(1/)	98	--	--	4	--	--	--	--	--
Hackberry	85	--	--	85	--	--	--	--	--	--	--	--
Ash	157	4	1	151	--	--	1	--	--	--	--	--
Honeylocust	4	--	--	3	--	--	1	--	--	--	--	--
Butternut	(1/)	--	--	(1/)	--	--	--	--	--	--	--	--
Black walnut	496	13	9	388	23	--	59	--	2	--	--	2
Sycamore	36	--	--	34	--	--	1	--	--	--	--	--
Cottonwood	1,500	8	--	1,475	--	--	16	--	--	--	--	--
Black cherry	29	3	(1/)	26	--	--	--	--	--	--	--	--
Red oak	1,088	14	1	1,049	--	--	24	--	--	--	--	--
White oak	1,035	12	17	982	--	--	21	--	(1/)	--	--	3
Willow	9	--	--	9	--	--	--	--	--	--	--	--
Basswood	166	--	(1/)	161	--	--	4	--	--	--	--	--
Elm	53	(1/)	(1/)	52	--	--	1	--	(1/)	--	--	(1/)
Other hardwoods	1	(1/)	(1/)	1	--	--	--	--	--	--	--	--
Total	6,472	55	30	6,171	23	--	186	--	2	--	--	5
All species	6,488	55	30	6,187	23	--	186	--	2	--	--	5

SOUTHWEST UNIT

Species group	Total	State of destination										Other countries
		Illinois	Indiana	Iowa	Kansas	Minnesota	Missouri	Nebraska	Ohio	S. Dakota	Wisconsin	
SOFTWOODS												
Eastern redcedar	2	--	--	2	--	--	--	--	--	--	--	--
White pine	(1/)	--	--	(1/)	--	--	--	--	--	--	--	--
	2	--	--	2	--	--	--	--	--	--	--	--
HARDWOODS												
Soft maple	51	--	--	48	--	--	--	3	--	--	--	--
Hickory	2	--	--	2	--	--	--	--	--	--	--	--
Hackberry	4	--	--	2	--	--	--	2	--	--	--	--
Ash	10	--	--	3	--	--	--	7	--	--	--	--
Honeylocust	2	--	--	2	--	--	--	--	--	--	--	--
Black walnut	148	--	(1/)	122	6	--	15	4	--	--	--	--
Cottonwood	713	--	--	45	--	--	--	668	--	--	--	--
Black cherry	(1/)	--	--	(1/)	--	--	--	--	--	--	--	--
Red oak	16	--	--	10	--	--	--	5	--	--	--	--
White oak	26	--	--	12	--	--	--	14	--	--	--	--
Basswood	4	--	--	2	--	--	--	2	--	--	--	--
Elm	10	--	--	1	--	--	--	9	--	--	--	--
Other hardwoods	2	--	--	2	--	--	--	--	--	--	--	--
Total	986	--	(1/)	250	6	--	15	714	--	--	--	--
All species	988	--	(1/)	252	6	--	15	714	--	--	--	--

1/ Less than 500 cubic feet.

Table 7.--Saw-log production by species group, Iowa, 1972, 1980, 1988, and 1994

(In thousand board feet) 1/

Species group	1972	1980	1988	1994	Change 1988-1994
SOFTWOODS					
Eastern redcedar	--	3	10	37	27
Red pine	2	--	4	7	3
White pine	103	--	4	58	54
Total	105	3	18	102	84
Hardwoods					
Soft maple	6,474	5,089	5,077	13,889	8,812
Hard maple	1,568	3,367	3,275	4,721	1,446
River birch	472	152	10	78	68
Hickory	783	447	432	1,158	726
Hackberry	568	498	284	985	701
Ash	1,649	1,636	1,867	2,491	624
Black walnut	2,669	5,025	3,649	5,769	2,120
Cottonwood	10,774	12,831	14,582	19,644	5,062
Aspen	188	305	24	381	357
Black cherry	113	132	252	647	395
Red oak	11,079	16,470	21,394	18,235	-3,159
White oak	6,508	12,118	10,743	14,057	3,314
Willow	438	233	7	124	117
Basswood	2,205	2,185	1,724	4,417	2,693
Elm	7,808	2,866	1,144	1,684	540
Other hardwoods	93	118	83	374	291
Total	53,389	63,472	64,547	88,655	24,108
All species	53,494	63,475	64,565	88,757	24,192

1/ International 1/4-inch rule.

Table 8.--Veneer-log production by species group, Iowa, 1972, 1980, 1988, and 1994

(In thousand board feet) 1/

Species group	1972	1980	1988	1994	Change 1988-1994
Soft maple	122	24	572	81	-491
Hard maple	216	14	--	51	51
Ash	111	57	--	2	2
Black walnut	1,238	1,795	1,084	902	-182
Cottonwood	84	23	27	84	57
Black cherry	--	--	3	46	43
Red oak	920	1,132	383	340	-43
White oak	19	672	405	1,165	760
Basswood	252	84	208	156	-52
Elm	440	--	8	18	10
Other hardwoods	613	--	10	2	-8
Total	4,015	3,801	2,700	2,848	148

1/ International 1/4-inch rule.

Table 9.--Pulpwood production by species group, Iowa, 1972, 1980, 1988, 1994

(In standard cords, unpeeled)

Species group	1972	1980	1988	1994	Change 1988-1994
Roundwood					
Softwoods	--	61	--	--	--
Soft hardwoods	10,062	6,169	12,408	7,164	-5,244
Hard hardwoods	20,837	10,554	3,239	3,134	-105
Total	30,899	16,784	15,647	10,298	-5,349
Residue					
Softwoods	11,482	4,986	--	--	--
Hardwoods	12,237	22,539	10,163	11,617	1,454
Total	23,719	27,525	10,163	11,617	1,454
All material	54,618	44,309	25,810	21,916	-3,894

Table 10.--Material harvested for industrial roundwood by source of material and species group, Iowa, 1994 1/

(In thousand cubic feet)

Species group	Growing stock				Non-growing stock							Total used	Total not used	Total harvested
	Used for products		Logging residue (not used)	Total growing stock	Used for products					Logging slash (not used)	Total non-growing stock			
	Sawtimber	Pole-timber			Limbwood	Saplings	Cull trees	Dead trees	Nonforest trees					
SOFTWOODS														
Eastern redcedar	3	5	1	9	1	(2/)	2	(2/)	--	5	8	10	6	16
Red pine	1	(2/)	(2/)	1	(2/)	--	(2/)	--	--	1	1	1	1	2
White pine	10	(2/)	1	11	(2/)	--	(2/)	--	--	5	5	10	6	16
Total	13	5	3	21	1	(2/)	2	(2/)	--	11	13	21	13	34
HARDWOODS														
Soft maple	1,789	111	718	2,618	42	5	161	2	335	1,506	2,050	2,445	2,224	4,668
Hard maple	604	20	244	868	10	(2/)	53	(2/)	114	512	689	801	756	1,557
River birch	14	2	4	20	2	(2/)	2	(2/)	2	9	14	21	13	34
Hickory	151	20	60	231	6	1	14	(2/)	28	126	175	220	185	406
Hackberry	123	3	51	177	2	--	11	--	24	107	143	162	158	320
Ash	331	19	129	479	11	1	32	(2/)	60	270	374	454	400	853
Honeylocust	4	(2/)	2	6	(2/)	--	(2/)	--	1	4	5	6	6	11
Butternut	3	(2/)	1	4	(2/)	--	(2/)	--	1	3	4	4	4	8
Black walnut	635	--	87	721	--	--	541	--	215	256	1,011	1,390	342	1,732
Sycamore	32	4	13	48	1	(2/)	3	(2/)	6	27	37	46	40	85
Cottonwood	2,630	200	452	3,281	257	13	59	5	--	1,315	1,648	3,163	1,766	4,929
Aspen	48	1	20	69	1	--	4	--	9	41	55	63	61	124
Black cherry	92	2	34	128	1	--	7	(2/)	16	70	94	118	104	222
Red oak	2,787	106	687	3,580	62	2	410	65	--	1,551	2,090	3,432	2,237	5,670
White oak	2,405	74	562	3,040	44	1	320	50	--	1,197	1,611	2,893	1,759	4,651
Black locust	2	(2/)	1	3	(2/)	--	(2/)	--	(2/)	2	3	3	3	6
Willow	16	(2/)	6	22	(2/)	--	1	--	3	14	18	20	20	40
Basswood	590	13	231	833	8	--	50	(2/)	107	479	643	767	709	1,477
Elm	229	23	88	339	9	1	22	1	41	183	256	325	270	595
Other hardwoods	6	(2/)	3	9	(2/)	--	1	--	1	5	7	8	8	16
Total	12,490	598	3,391	16,478	454	25	1,690	123	961	7,673	10,926	16,340	11,064	27,404
All species	12,504	603	3,393	16,500	455	25	1,692	123	961	7,684	10,939	16,362	11,077	27,439

1/ Factors for determining the amount of wood in each category are based on regional utilization studies.

2/ Less than 500 cubic feet.

Table 11.--Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Iowa, 1994

(In thousand cubic feet)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
NORTHEAST UNIT												
Allamakee	--	--	--	65	202	--	20	6	47	--	(1/)	83
Benton	1	--	--	28	(1/)	--	(1/)	2	3	--	(1/)	3
Black Hawk	(1/)	--	--	1	(1/)	--	--	(1/)	1	--	(1/)	(1/)
Bremer	--	--	--	16	15	--	3	7	7	--	--	1
Buchanan	1	--	--	5	(1/)	--	--	(1/)	1	--	(1/)	1
Butler	--	--	--	2	7	--	1	3	2	--	--	--
Cedar	--	--	--	9	15	(1/)	2	1	3	--	--	14
Chickasaw	--	--	--	2	7	--	1	3	5	--	--	(1/)
Clayton	--	--	--	51	317	--	31	14	79	--	1	103
Clinton	--	--	--	4	3	--	1	1	3	--	--	1
Delaware	--	--	--	14	22	(1/)	2	4	26	--	(1/)	37
Dubuque	--	--	--	109	39	3	24	1	24	--	--	15
Fayette	--	--	--	12	108	--	7	8	35	--	1	49
Floyd	--	--	--	1	4	--	1	2	1	--	--	(1/)
Grundy	--	--	--	--	--	--	--	--	--	--	--	--
Howard	--	--	--	1	--	--	--	--	7	--	--	(1/)
Jackson	--	--	--	33	15	(1/)	6	3	7	--	--	19
Johnson	--	--	--	26	(1/)	2	5	5	3	--	--	12
Jones	--	--	--	16	25	(1/)	3	3	8	--	--	20
Linn	(1/)	--	--	58	(1/)	--	(1/)	1	8	--	(1/)	13
Mitchell	--	--	--	(1/)	--	--	--	--	--	--	--	(1/)
Scott	--	--	--	32	(1/)	2	5	5	4	--	--	(1/)
Tama	1	--	--	237	(1/)	--	2	7	6	--	(1/)	17
Winneshiek	--	--	--	22	61	--	4	(1/)	22	--	--	18
Total	3	--	--	744	842	7	120	80	303	--	4	405
NORTHWEST UNIT												
Cerro Gordo	--	--	--	--	--	--	--	--	--	--	--	--
Emmet	--	--	--	--	--	--	--	--	--	--	--	--
Franklin	--	--	--	--	--	--	--	--	--	--	--	--
Humboldt	--	--	--	(1/)	--	--	--	--	--	--	--	--
Kossuth	--	--	--	--	--	--	--	--	--	--	--	--
Lyon	--	--	--	--	--	--	--	--	--	--	--	--
Plymouth	--	--	--	--	--	--	--	--	--	--	--	--
Sioux	--	--	--	--	--	--	--	--	--	--	--	--
Winnebago	--	--	--	--	--	--	--	--	--	--	--	--
Worth	--	--	--	4	--	--	--	--	--	--	--	(1/)
Wright	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	4	--	--	--	--	--	--	--	(1/)

(Table 11 continued on next page)

(Table 11 continued)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
SOUTHEAST UNIT												
Appanoose	--	--	--	63	--	--	4	2	5	--	--	5
Boone	1	--	(1/)	49	3	--	(1/)	1	5	--	--	3
Clarke	1	--	--	11	--	--	--	(1/)	(1/)	--	--	2
Dallas	1	--	(1/)	22	(1/)	--	(1/)	(1/)	2	(1/)	--	1
Davis	--	--	1	37	--	--	2	1	5	--	--	8
Decatur	--	--	--	2	--	--	(1/)	(1/)	(1/)	(1/)	--	5
Des Moines	--	--	--	100	3	2	9	5	16	--	--	6
Guthrie	--	--	--	(1/)	--	--	(1/)	(1/)	(1/)	(1/)	--	--
Hamilton	--	--	--	8	1	--	--	--	1	--	--	1
Hardin	--	--	--	4	2	--	2	7	2	--	--	(1/)
Henry	(1/)	1	1	80	(1/)	3	13	9	11	--	--	19
Iowa	--	--	--	77	(1/)	1	7	10	5	--	--	22
Jasper	(1/)	--	--	22	(1/)	--	--	1	(1/)	--	(1/)	5
Jefferson	(1/)	(1/)	(1/)	91	(1/)	(1/)	4	(1/)	8	--	--	17
Keokuk	1	(1/)	(1/)	157	(1/)	3	14	13	14	--	--	20
Lee	(1/)	1	1	471	3	1	16	4	20	--	--	31
Louisa	--	--	--	46	(1/)	(1/)	3	(1/)	11	--	--	22
Lucas	1	--	--	21	--	--	--	1	1	--	--	6
Madison	--	--	--	--	--	--	--	--	--	--	--	--
Mahaska	--	--	--	104	(1/)	--	6	3	7	--	--	2
Marion	--	--	--	23	3	--	3	7	4	--	--	2
Marshall	--	--	--	9	2	--	2	7	2	--	--	(1/)
Monroe	--	--	--	21	(1/)	--	1	1	4	--	--	6
Muscatine	--	--	--	59	3	2	6	8	5	4	--	1
Polk	--	--	--	25	--	--	--	--	(1/)	--	--	(1/)
Poweshiek	--	--	--	5	(1/)	(1/)	1	(1/)	(1/)	--	--	7
Story	--	--	--	2	(1/)	--	--	--	(1/)	--	--	1
Van Buren	(1/)	--	--	62	(1/)	(1/)	5	1	13	--	--	18
Wapello	--	--	8	80	(1/)	--	2	1	7	--	--	8
Warren	--	--	--	11	--	--	--	--	--	--	--	--
Washington	--	--	--	103	(1/)	1	8	6	10	--	--	19
Wayne	--	--	--	21	--	--	--	1	1	--	--	5
Webster	--	--	--	27	2	--	--	--	3	--	--	2
Total	4	1	11	1,814	26	13	110	92	165	4	(1/)	245
SOUTHWEST UNIT												
Cass	--	--	--	--	--	--	--	--	--	--	--	9
Crawford	--	--	--	--	--	--	--	--	--	--	--	--
Fremont	--	--	--	--	--	--	--	2	--	--	--	--
Greene	1	--	(1/)	20	--	--	--	--	1	--	--	(1/)
Harrison	--	--	--	11	--	--	(1/)	(1/)	8	(1/)	--	13
Mills	(1/)	--	--	(1/)	--	--	--	--	--	--	--	12
Monona	--	--	--	--	--	--	--	(1/)	--	--	--	1
Montgomery	--	--	--	(1/)	--	--	--	--	--	--	--	9
Page	--	--	--	(1/)	--	--	--	--	--	--	--	(1/)
Pottawattamie	(1/)	--	--	21	--	--	1	1	1	1	--	11
Ringgold	--	--	--	3	--	--	--	--	--	--	--	1
Shelby	--	--	--	--	--	--	--	--	--	--	--	9
Taylor	--	--	--	--	--	--	--	--	--	--	--	1
Union	--	--	--	--	--	--	--	--	--	--	--	3
Woodbury	(1/)	--	--	--	--	--	--	--	1	--	--	(1/)
Total	2	--	(1/)	56	--	--	2	4	10	2	--	70
State total	9	1	11	2,618	868	20	231	177	479	6	4	721

(Table 11 continued on next page)

(Table 11 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
NORTHEAST UNIT												
Allamakee	--	47	25	17	509	407	--	5	161	48	2	1,644
Benton	(1/)	41	--	(1/)	18	17	--	2	1	1	--	117
Black Hawk	(1/)	1	--	(1/)	11	6	--	(1/)	1	1	--	24
Bremer	--	5	5	--	24	39	--	--	3	1	--	125
Buchanan	(1/)	5	--	(1/)	17	14	--	(1/)	1	1	(1/)	47
Butler	--	6	2	--	10	18	--	--	--	--	--	54
Cedar	(1/)	13	--	2	59	25	--	--	9	4	--	158
Chickasaw	--	2	2	--	18	37	--	--	1	3	--	84
Clayton	--	17	13	30	752	467	--	1	166	55	2	2,100
Clinton	--	12	--	1	9	7	--	--	4	1	--	48
Delaware	--	11	--	10	135	86	--	--	71	31	(1/)	451
Dubuque	4	247	--	6	218	124	--	--	28	34	1	877
Fayette	--	40	10	7	240	186	--	1	86	30	1	820
Floyd	--	1	1	(1/)	6	16	--	--	--	--	--	34
Grundy	--	4	--	--	--	--	--	--	--	--	--	4
Howard	--	7	1	--	19	51	--	--	5	8	--	98
Jackson	(1/)	(1/)	--	9	43	49	--	--	21	4	--	211
Johnson	2	74	--	(1/)	41	45	--	--	2	2	--	221
Jones	(1/)	11	--	6	66	31	--	--	17	11	--	218
Linn	(1/)	3	--	3	34	40	1	(1/)	4	4	--	170
Mitchell	--	3	--	--	--	--	--	--	--	--	--	4
Scott	2	63	--	1	36	43	--	--	3	2	--	199
Tama	--	83	--	(1/)	21	18	2	2	5	5	--	407
Winneshiek	--	29	8	3	153	164	--	2	55	26	--	566
Total	10	727	69	96	2,439	1,891	3	13	646	272	6	8,680
NORTHWEST UNIT												
Cerro Gordo	--	1	--	--	(1/)	(1/)	--	--	--	--	--	1
Emmet	--	1	--	--	--	--	--	--	--	--	--	1
Franklin	--	4	--	--	--	26	--	--	--	--	--	30
Humboldt	--	11	--	--	1	7	--	--	2	--	--	21
Kossuth	--	79	--	--	--	7	--	--	2	--	--	89
Lyon	--	4	--	--	--	--	--	--	--	--	--	4
Plymouth	--	87	--	--	--	--	--	--	--	--	--	87
Sioux	--	4	--	--	--	--	--	--	--	--	--	4
Winnebago	--	1	--	--	--	--	--	--	--	--	(1/)	1
Worth	--	11	--	--	(1/)	2	--	--	--	--	--	17
Wright	--	4	--	--	--	--	--	--	--	--	--	4
Total	--	206	--	--	1	42	--	--	5	--	(1/)	259

(Table 11 continued on next page)

(Table 11 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
SOUTHEAST UNIT												
Appanoose	(1/)	33	--	(1/)	33	42	--	--	3	(1/)	--	191
Boone	--	28	--	1	41	16	--	--	19	1	--	169
Clarke	--	39	--	(1/)	6	8	--	--	--	--	--	68
Dallas	--	21	--	(1/)	3	2	--	--	(1/)	--	(1/)	54
Davis	(1/)	32	--	(1/)	30	68	--	--	3	(1/)	--	187
Decatur	--	18	--	(1/)	(1/)	2	--	--	(1/)	--	(1/)	29
Des Moines	3	71	--	1	68	45	--	1	9	5	(1/)	344
Guthrie	--	5	--	--	--	--	--	--	(1/)	--	(1/)	7
Hamilton	--	13	--	(1/)	11	4	--	--	8	(1/)	--	47
Hardin	--	13	--	--	5	5	--	--	2	(1/)	--	44
Henry	3	135	--	1	91	91	--	--	13	4	(1/)	476
Iowa	3	78	--	2	36	45	--	3	10	5	--	304
Jasper	--	24	--	1	7	4	--	--	2	1	--	68
Jefferson	2	49	--	1	32	41	--	--	3	1	--	250
Keokuk	4	165	--	2	108	110	--	1	8	7	--	627
Lee	8	195	--	5	124	97	--	1	23	7	(1/)	1,006
Louisa	1	33	--	1	34	34	--	--	6	3	--	194
Lucas	--	16	--	(1/)	16	24	--	--	(1/)	--	--	86
Madison	--	(1/)	--	--	--	--	--	--	--	--	--	(1/)
Mahaska	3	81	--	1	55	56	--	1	5	3	--	327
Marion	--	66	--	1	40	28	--	--	4	(1/)	--	181
Marshall	--	24	--	(1/)	5	5	--	(1/)	2	1	--	61
Monroe	--	45	--	1	49	43	--	--	3	1	--	176
Muscatine	5	76	--	3	76	63	--	--	7	5	--	324
Polk	--	10	--	(1/)	(1/)	21	--	--	--	(1/)	--	58
Poweshiek	(1/)	43	--	1	34	26	--	(1/)	1	(1/)	--	122
Story	--	4	--	--	2	1	--	--	--	--	--	10
Van Buren	1	46	--	3	62	54	--	--	17	3	(1/)	287
Wapello	2	72	--	1	64	66	--	--	5	1	--	317
Warren	--	31	--	--	--	(1/)	--	--	--	--	--	42
Washington	2	93	--	1	46	48	--	1	8	4	--	352
Wayne	--	12	--	(1/)	13	23	--	--	1	--	--	78
Webster	--	13	--	1	31	7	--	--	17	1	--	103
Total	39	1,585	--	31	1,124	1,079	--	9	179	56	1	6,590
SOUTHWEST UNIT												
Cass	--	--	--	--	--	(1/)	--	--	--	--	--	9
Crawford	--	4	--	--	--	1	--	--	--	--	--	5
Fremont	--	5	--	--	3	3	--	--	--	--	--	13
Greene	--	6	--	--	2	2	--	--	(1/)	1	--	33
Harrison	--	542	--	--	1	10	--	--	(1/)	10	(1/)	598
Mills	--	16	--	--	3	3	--	--	--	(1/)	--	34
Monona	--	100	--	--	1	4	--	--	--	(1/)	--	107
Montgomery	--	--	--	--	1	(1/)	--	--	--	(1/)	--	10
Page	--	1	--	(1/)	1	1	--	--	--	(1/)	--	3
Pottawattamie	--	4	--	--	3	1	--	--	1	--	1	48
Ringgold	--	1	--	--	1	2	--	--	(1/)	--	--	8
Shelby	--	--	--	--	--	(1/)	--	--	--	--	--	9
Taylor	--	--	--	--	--	--	--	--	1	--	--	2
Union	--	--	--	--	--	--	--	--	--	--	--	3
Woodbury	--	84	--	(1/)	2	(1/)	--	--	--	--	--	87
Total	--	763	--	(1/)	16	28	--	--	4	11	2	971
State total	48	3,281	69	128	3,580	3,040	3	22	833	339	9	16,500

1/ Less than 500 cubic feet.

Table 12.--Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Iowa, 1994

(In thousand board feet) 1/

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
NORTHEAST UNIT												
Allamakee	--	--	--	249	779	--	75	23	180	--	2	458
Benton	1	--	--	107	1	--	(2/)	9	10	--	1	13
Black Hawk	(2/)	--	--	5	1	--	--	2	3	--	1	1
Bremer	--	--	--	61	57	--	12	27	27	--	--	4
Buchanan	1	--	--	21	1	--	--	2	3	--	1	3
Butler	--	--	--	10	29	--	6	13	10	--	--	--
Cedar	--	--	--	33	57	1	10	4	13	--	--	62
Chickasaw	--	--	--	10	29	--	6	13	20	--	--	1
Clayton	--	--	--	195	1,222	--	119	56	304	--	4	520
Clinton	--	--	--	15	12	--	5	6	11	--	--	3
Delaware	--	--	--	54	84	1	8	17	103	--	2	167
Dubuque	--	--	--	161	126	3	30	4	53	--	--	77
Fayette	--	--	--	46	416	--	27	31	136	--	3	233
Floyd	--	--	--	5	14	--	3	7	5	--	--	1
Grundy	--	--	--	--	--	--	--	--	--	--	--	--
Howard	--	--	--	3	--	--	--	--	26	--	--	1
Jackson	--	--	--	129	58	1	25	13	27	--	--	128
Johnson	--	--	--	102	1	7	19	19	12	--	--	55
Jones	--	--	--	63	97	1	12	10	34	--	--	88
Linn	(2/)	--	--	223	2	--	2	5	30	--	1	59
Mitchell	--	--	--	2	--	--	--	--	--	--	--	1
Scott	--	--	--	123	2	8	19	20	17	--	--	1
Tama	1	--	--	914	1	--	8	26	23	--	2	78
Winneshiek	--	--	--	84	235	--	14	2	84	--	--	109
Total	3	--	--	2,614	3,223	21	399	308	1,130	--	16	2,060
NORTHWEST UNIT												
Cerro Gordo	--	--	--	--	--	--	--	--	--	--	--	--
Emmet	--	--	--	--	--	--	--	--	--	--	--	--
Franklin	--	--	--	--	--	--	--	--	--	--	--	--
Humboldt	--	--	--	1	--	--	--	--	--	--	--	--
Kossuth	--	--	--	--	--	--	--	--	--	--	--	--
Lyon	--	--	--	--	--	--	--	--	--	--	--	--
Plymouth	--	--	--	--	--	--	--	--	--	--	--	--
Sioux	--	--	--	--	--	--	--	--	--	--	--	--
Winnebago	--	--	--	--	--	--	--	--	--	--	--	--
Worth	--	--	--	14	--	--	--	--	--	--	--	1
Wright	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	15	--	--	--	--	--	--	--	1

(Table 12 continued on next page)

(Table 12 continued)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
SOUTHEAST UNIT												
Appanoose	--	--	--	242	--	--	14	7	18	--	--	25
Boone	1	--	2	189	11	--	(2/)	6	18	--	--	15
Clarke	1	--	--	44	--	--	--	1	2	--	--	8
Dallas	1	--	1	84	1	--	1	1	9	1	--	3
Davis	--	--	5	141	--	--	8	6	19	--	--	34
Decatur	--	--	--	7	--	--	1	1	1	1	--	35
Des Moines	--	--	--	387	11	7	34	19	64	--	--	29
Guthrie	--	--	--	1	--	--	1	1	1	1	--	--
Hamilton	--	--	--	31	6	--	--	--	3	--	--	3
Hardin	--	--	--	17	9	--	9	28	9	--	--	1
Henry	(2/)	3	3	311	1	12	49	35	44	--	--	87
Iowa	--	--	--	296	2	3	27	37	21	--	--	97
Jasper	(2/)	--	--	86	1	--	--	3	1	--	1	23
Jefferson	(2/)	1	1	351	1	(2/)	15	(2/)	33	--	--	76
Keokuk	1	(2/)	(2/)	605	2	11	54	49	54	--	--	90
Lee	(2/)	3	3	1,815	10	5	63	14	79	--	--	140
Louisa	--	--	--	177	1	1	12	1	41	--	--	100
Lucas	1	--	--	80	--	--	--	6	5	--	--	25
Madison	--	--	--	--	--	--	--	--	--	--	--	--
Mahaska	--	--	--	400	2	--	24	13	27	--	--	11
Marion	--	--	--	89	10	--	11	28	16	--	--	8
Marshall	--	--	--	35	9	--	9	27	9	--	--	1
Monroe	--	--	--	79	1	--	5	6	16	--	--	27
Muscatine	--	--	--	228	11	7	25	31	18	14	--	6
Polk	--	--	--	98	--	--	--	--	1	--	--	2
Poweshiek	--	--	--	21	2	1	3	2	1	--	--	47
Story	--	--	--	6	2	--	--	--	2	--	--	3
Van Buren	(2/)	--	--	239	1	2	21	3	51	--	--	97
Wapello	--	--	41	310	1	--	7	6	26	--	--	37
Warren	--	--	--	43	--	--	--	--	--	--	--	--
Washington	--	--	--	397	2	3	32	23	38	--	--	85
Wayne	--	--	--	82	--	--	--	5	6	--	--	24
Webster	--	--	--	103	7	--	--	--	10	--	--	10
Total	5	6	56	6,997	102	51	424	356	641	17	1	1,145
SOUTHWEST UNIT												
Cass	--	--	--	--	--	--	--	--	--	--	--	40
Crawford	--	--	--	--	--	--	--	--	--	--	--	--
Fremont	--	--	--	--	--	--	--	10	--	--	--	--
Greene	1	--	1	78	--	--	--	--	3	--	--	2
Harrison	--	--	--	44	--	--	2	2	31	2	--	59
Mills	(2/)	--	--	(2/)	--	--	--	--	--	--	--	52
Monona	--	--	--	--	--	--	--	1	--	--	--	6
Montgomery	--	--	--	(2/)	--	--	--	--	--	--	--	40
Page	--	--	--	(2/)	--	--	--	--	--	--	--	1
Pottawattamie	(2/)	--	--	80	--	--	5	5	5	5	--	52
Ringgold	--	--	--	11	--	--	--	--	--	--	--	5
Shelby	--	--	--	--	--	--	--	--	--	--	--	40
Taylor	--	--	--	--	--	--	--	--	--	--	--	5
Union	--	--	--	--	--	--	--	--	--	--	--	14
Woodbury	(2/)	--	--	--	--	--	--	--	2	--	--	1
Total	2	--	1	214	--	--	7	17	40	7	--	317
State total	10	6	57	9,841	3,325	72	829	681	1,812	24	17	3,524

(Table 12 continued on next page)

(Table 12 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
NORTHEAST UNIT												
Allamakee	--	268	97	66	1,868	1,598	--	19	624	187	8	6,501
Benton	1	233	--	1	67	61	--	7	4	5	--	521
Black Hawk	1	8	--	1	39	21	--	(2/)	4	2	--	89
Bremer	--	31	20	--	86	142	--	--	10	4	--	482
Buchanan	1	28	--	1	62	53	--	(2/)	4	3	(2/)	184
Butler	--	34	10	--	38	66	--	--	--	--	--	214
Cedar	1	74	--	10	219	94	--	--	35	15	--	627
Chickasaw	--	13	10	--	67	135	--	--	3	11	--	317
Clayton	--	100	50	115	2,764	1,746	--	3	644	214	7	8,062
Clinton	--	69	--	6	32	26	--	--	14	5	--	204
Delaware	--	66	--	37	498	320	--	--	275	122	1	1,754
Dubuque	4	234	--	22	694	403	--	--	110	65	3	1,990
Fayette	--	228	38	26	882	691	--	3	334	116	2	3,211
Floyd	--	8	5	2	21	58	--	--	--	--	--	128
Grundy	--	22	--	--	--	--	--	--	--	--	--	22
Howard	--	41	3	--	69	185	--	--	17	32	--	377
Jackson	1	1	--	34	157	182	--	--	82	16	--	853
Johnson	7	425	--	2	150	166	--	--	9	8	--	982
Jones	1	61	--	23	243	114	--	--	67	42	--	857
Linn	1	17	--	10	126	148	4	(2/)	16	14	--	658
Mitchell	--	18	--	--	--	--	--	--	--	--	--	21
Scott	8	363	--	5	132	158	--	--	10	9	--	874
Tama	--	476	--	1	76	64	9	10	21	18	--	1,727
Winneshiek	--	165	33	10	561	649	--	6	213	101	--	2,265
Total	25	2,983	264	372	8,851	7,081	12	50	2,496	989	22	32,920
NORTHWEST UNIT												
Cerro Gordo	--	4	--	--	1	1	--	--	--	--	--	6
Emmet	--	5	--	--	--	--	--	--	--	--	--	5
Franklin	--	22	--	--	--	95	--	--	--	--	--	116
Humboldt	--	65	--	--	2	26	--	--	10	--	--	103
Kossuth	--	459	--	--	--	26	--	--	9	--	--	493
Lyon	--	22	--	--	--	--	--	--	--	--	--	22
Plymouth	--	505	--	--	--	--	--	--	--	--	--	505
Sioux	--	22	--	--	--	--	--	--	--	--	--	22
Winnebago	--	6	--	--	--	--	--	--	--	--	1	7
Worth	--	62	--	--	1	9	--	--	--	--	--	87
Wright	--	22	--	--	--	--	--	--	--	--	--	22
Total	--	1,192	--	--	4	155	--	--	18	--	1	1,386

(Table 12 continued on next page)

(Table 12 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
SOUTHEAST UNIT												
Appanoose	1	191	--	2	121	155	--	--	11	2	--	789
Boone	--	164	--	3	149	60	--	--	75	5	--	698
Clarke	--	227	--	1	21	30	--	--	--	--	--	335
Dallas	--	120	--	1	13	8	--	--	2	--	1	245
Davis	1	185	--	2	109	249	--	--	11	2	--	773
Decatur	--	104	--	1	1	7	--	--	1	--	1	161
Des Moines	11	389	--	5	261	170	--	4	35	20	(2/)	1,447
Guthrie	--	28	--	--	--	--	--	--	1	--	1	35
Hamilton	--	72	--	1	39	15	--	--	31	1	--	202
Hardin	--	76	--	--	17	17	--	--	9	2	--	192
Henry	12	765	--	6	335	338	--	--	48	17	(2/)	2,066
Iowa	11	448	--	9	131	168	--	13	38	19	--	1,319
Jasper	--	138	--	3	26	16	--	--	7	5	--	307
Jefferson	10	285	--	5	116	151	--	--	10	3	--	1,057
Keokuk	16	951	--	7	396	403	--	5	30	26	--	2,700
Lee	30	1,103	--	20	463	358	--	4	88	26	(2/)	4,225
Louisa	3	188	--	5	123	124	--	--	25	12	--	813
Lucas	--	92	--	1	57	89	--	--	2	--	--	358
Madison	--	2	--	--	--	--	--	--	--	--	--	2
Mahaska	10	470	--	3	201	204	--	4	18	10	--	1,398
Marion	--	380	--	4	148	101	--	--	16	2	--	813
Marshall	--	139	--	1	19	18	--	1	10	6	--	281
Monroe	--	261	--	4	181	156	--	--	12	3	--	750
Muscatine	21	442	--	11	280	229	--	--	26	20	--	1,368
Polk	--	60	--	(2/)	1	76	--	--	--	(2/)	--	239
Poweshiek	2	251	--	4	125	98	--	1	4	1	--	562
Story	--	22	--	--	8	2	--	--	--	--	--	45
Van Buren	5	262	--	10	228	203	--	--	66	12	(2/)	1,200
Wapello	7	418	--	4	236	240	--	--	18	3	--	1,351
Warren	--	177	--	--	--	1	--	--	--	--	--	221
Washington	8	538	--	6	170	176	--	5	30	16	--	1,528
Wayne	--	71	--	1	48	82	--	--	3	--	--	322
Webster	--	74	--	3	112	27	--	--	65	5	--	416
Total	149	9,094	--	121	4,135	3,970	--	36	690	216	4	28,219
SOUTHWEST UNIT												
Cass	--	--	--	--	--	1	--	--	--	--	--	41
Crawford	--	24	--	--	--	5	--	--	--	--	--	29
Fremont	--	30	--	--	9	9	--	--	--	--	--	59
Greene	--	34	--	--	7	6	--	--	2	4	--	137
Harrison	--	3,134	--	--	5	35	--	--	2	38	2	3,355
Mills	--	72	--	--	12	13	--	--	--	(2/)	--	150
Monona	--	579	--	--	5	14	--	--	--	1	--	607
Montgomery	--	--	--	--	2	1	--	--	--	(2/)	--	44
Page	--	5	--	1	2	4	--	--	--	(2/)	--	13
Pottawattamie	--	25	--	--	10	4	--	--	5	--	5	200
Ringgold	--	5	--	--	2	7	--	--	2	--	--	31
Shelby	--	--	--	--	--	1	--	--	--	--	--	41
Taylor	--	--	--	--	--	--	--	--	6	--	--	10
Union	--	--	--	--	--	--	--	--	--	--	--	14
Woodbury	--	483	--	1	6	1	--	--	--	--	--	494
Total	--	4,391	--	2	60	101	--	--	16	44	7	5,225
State total	175	17,661	264	495	13,050	11,307	12	86	3,220	1,249	33	67,750

1/ International 1/4-inch rule.

2/ Less than 500 board feet.

Table 13.--Residue generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Iowa, 1994 1/

(In thousand cubic feet)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
NORTHEAST UNIT												
Allamakee	--	--	--	57	176	--	17	5	42	--	(1/)	28
Benton	(1/)	--	--	24	(1/)	--	(1/)	2	2	--	(1/)	2
Black Hawk	(1/)	--	--	1	(1/)	--	--	(1/)	1	--	(1/)	(1/)
Bremer	--	--	--	14	13	--	3	6	6	--	--	(1/)
Buchanan	(1/)	--	--	5	(1/)	--	--	(1/)	1	--	(1/)	(1/)
Butler	--	--	--	2	7	--	1	3	2	--	--	--
Cedar	--	--	--	8	13	(1/)	2	1	3	--	--	8
Chickasaw	--	--	--	2	7	--	1	3	5	--	--	(1/)
Clayton	--	--	--	44	281	--	28	13	70	--	1	46
Clinton	--	--	--	4	3	--	1	1	3	--	--	(1/)
Delaware	--	--	--	9	19	(1/)	2	4	20	--	(1/)	20
Dubuque	--	--	--	19	25	(1/)	3	1	9	--	--	7
Fayette	--	--	--	11	96	--	6	7	31	--	1	24
Floyd	--	--	--	1	3	--	1	2	1	--	--	(1/)
Grundy	--	--	--	--	--	--	--	--	--	--	--	--
Howard	--	--	--	1	--	--	--	--	6	--	--	(1/)
Jackson	--	--	--	29	13	(1/)	6	3	6	--	--	2
Johnson	--	--	--	24	(1/)	2	4	4	3	--	--	7
Jones	--	--	--	10	22	(1/)	3	2	5	--	--	11
Linn	(1/)	--	--	49	(1/)	--	(1/)	1	7	--	(1/)	7
Mitchell	--	--	--	(1/)	--	--	--	--	--	--	--	(1/)
Scott	--	--	--	28	(1/)	2	4	5	4	--	--	(1/)
Tama	1	--	--	204	(1/)	--	2	6	5	--	(1/)	10
Winneshiek	--	--	--	19	52	--	3	(1/)	19	--	--	4
Total	2	--	--	562	733	4	88	71	252	--	4	176
NORTHWEST UNIT												
Cerro Gordo	--	--	--	--	--	--	--	--	--	--	--	--
Emmet	--	--	--	--	--	--	--	--	--	--	--	--
Franklin	--	--	--	--	--	--	--	--	--	--	--	--
Humboldt	--	--	--	(1/)	--	--	--	--	--	--	--	--
Kossuth	--	--	--	--	--	--	--	--	--	--	--	--
Lyon	--	--	--	--	--	--	--	--	--	--	--	--
Plymouth	--	--	--	--	--	--	--	--	--	--	--	--
Sioux	--	--	--	--	--	--	--	--	--	--	--	--
Winnebago	--	--	--	--	--	--	--	--	--	--	--	--
Worth	--	--	--	3	--	--	--	--	--	--	--	(1/)
Wright	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	4	--	--	--	--	--	--	--	(1/)

(Table 13 continued on next page)

(Table 13 continued)

Forest Survey Unit and county	Eastern redcedar	Red pine	White pine	Soft maple	Hard maple	River birch	Hickory	Hackberry	Ash	Honey-locust	Butternut	Black walnut
SOUTHEAST UNIT												
Appanoose	--	--	--	56	--	--	3	2	4	--	--	3
Boone	(1/)	--	(1/)	44	3	--	(1/)	1	4	--	--	2
Clarke	(1/)	--	--	10	--	--	--	(1/)	(1/)	--	--	1
Dallas	(1/)	--	(1/)	19	(1/)	--	(1/)	(1/)	2	(1/)	--	(1/)
Davis	--	--	1	33	--	--	2	1	4	--	--	4
Decatur	--	--	--	2	--	--	(1/)	(1/)	(1/)	(1/)	--	(1/)
Des Moines	--	--	--	86	2	(1/)	7	4	11	--	--	4
Guthrie	--	--	--	(1/)	--	--	(1/)	(1/)	(1/)	(1/)	--	--
Hamilton	--	--	--	7	1	--	--	--	1	--	--	(1/)
Hardin	--	--	--	4	2	--	2	6	2	--	--	(1/)
Henry	(1/)	(1/)	(1/)	70	(1/)	2	11	8	9	--	--	11
Iowa	--	--	--	68	(1/)	1	6	9	5	--	--	12
Jasper	(1/)	--	--	20	(1/)	--	--	1	(1/)	--	(1/)	3
Jefferson	(1/)	(1/)	(1/)	81	(1/)	(1/)	4	(1/)	8	--	--	9
Keokuk	(1/)	(1/)	(1/)	140	(1/)	3	13	11	13	--	--	11
Lee	(1/)	(1/)	(1/)	416	2	(1/)	14	3	14	--	--	17
Louisa	--	--	--	40	(1/)	(1/)	3	(1/)	9	--	--	12
Lucas	(1/)	--	--	19	--	--	--	1	1	--	--	3
Madison	--	--	--	--	--	--	--	--	--	--	--	--
Mahaska	--	--	--	93	(1/)	--	6	3	6	--	--	1
Marion	--	--	--	21	2	--	3	6	4	--	--	1
Marshall	--	--	--	8	2	--	2	6	2	--	--	(1/)
Monroe	--	--	--	18	(1/)	--	1	1	4	--	--	3
Muscatine	--	--	--	53	3	2	6	7	4	3	--	1
Polk	--	--	--	23	--	--	--	--	(1/)	--	--	(1/)
Poweshiek	--	--	--	5	(1/)	(1/)	1	(1/)	(1/)	--	--	1
Story	--	--	--	1	(1/)	--	--	--	(1/)	--	--	(1/)
Van Buren	(1/)	--	--	54	(1/)	(1/)	5	1	11	--	--	7
Wapello	--	--	4	72	(1/)	--	2	1	6	--	--	5
Warren	--	--	--	10	--	--	--	--	--	--	--	--
Washington	--	--	--	92	(1/)	1	8	5	9	--	--	10
Wayne	--	--	--	19	--	--	--	1	1	--	--	3
Webster	--	--	--	24	2	--	--	--	2	--	--	1
Total	3	1	6	1,608	23	9	96	82	139	4	(1/)	127
SOUTHWEST UNIT												
Cass	--	--	--	--	--	--	--	--	--	--	--	5
Crawford	--	--	--	--	--	--	--	--	--	--	--	--
Fremont	--	--	--	--	--	--	--	2	--	--	--	--
Greene	(1/)	--	(1/)	18	--	--	--	--	1	--	--	(1/)
Harrison	--	--	--	10	--	--	(1/)	(1/)	7	(1/)	--	7
Mills	(1/)	--	--	(1/)	--	--	--	--	--	--	--	6
Monona	--	--	--	--	--	--	--	(1/)	--	--	--	1
Montgomery	--	--	--	(1/)	--	--	--	--	--	--	--	5
Page	--	--	--	(1/)	--	--	--	--	--	--	--	(1/)
Pottawattamie	(1/)	--	--	19	--	--	1	1	1	1	--	6
Ringgold	--	--	--	3	--	--	--	--	--	--	--	1
Shelby	--	--	--	--	--	--	--	--	--	--	--	5
Taylor	--	--	--	--	--	--	--	--	--	--	--	1
Union	--	--	--	--	--	--	--	--	--	--	--	2
Woodbury	(1/)	--	--	--	--	--	--	--	1	--	--	(1/)
Total	1	--	(1/)	50	--	--	2	4	9	2	--	39
State total	6	1	6	2,224	756	13	185	158	400	6	4	342

(Table 13 continued on next page)

(Table 13 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
NORTHEAST UNIT												
Allamakee	--	27	22	12	322	197	--	4	131	43	2	1,086
Benton	(1/)	23	--	(1/)	12	10	--	2	1	1	--	80
Black Hawk	(1/)	1	--	(1/)	7	4	--	(1/)	1	(1/)	--	16
Bremer	--	3	5	--	15	25	--	--	2	1	--	95
Buchanan	(1/)	3	--	(1/)	11	9	--	(1/)	1	1	(1/)	33
Butler	--	3	2	--	7	12	--	--	--	--	--	40
Cedar	(1/)	7	--	2	37	15	--	--	8	3	--	109
Chickasaw	--	1	2	--	12	24	--	--	1	3	--	61
Clayton	--	10	11	25	474	252	--	1	138	48	2	1,443
Clinton	--	7	--	1	6	5	--	--	3	1	--	35
Delaware	--	7	--	9	84	50	--	--	64	24	(1/)	312
Dubuque	(1/)	2	--	4	114	59	--	--	25	11	1	280
Fayette	--	23	9	6	152	108	--	1	74	27	1	575
Floyd	--	1	1	(1/)	4	10	--	--	--	--	--	24
Grundy	--	2	--	--	--	--	--	--	--	--	--	2
Howard	--	4	1	--	12	33	--	--	4	7	--	68
Jackson	(1/)	(1/)	--	7	27	27	--	--	19	3	--	142
Johnson	2	43	--	(1/)	27	30	--	--	2	2	--	149
Jones	(1/)	5	--	5	41	19	--	--	16	6	--	146
Linn	(1/)	2	--	2	21	24	1	(1/)	4	3	--	123
Mitchell	--	2	--	--	--	--	--	--	--	--	--	2
Scott	2	37	--	1	24	28	--	--	2	2	--	139
Tama	--	48	--	(1/)	13	11	2	2	5	4	--	314
Winneshiek	--	17	8	1	96	82	--	1	44	23	--	370
Total	5	280	61	77	1,518	1,035	3	11	544	214	5	5,646
NORTHWEST UNIT												
Cerro Gordo	--	(1/)	--	--	(1/)	(1/)	--	--	--	--	--	1
Emmet	--	(1/)	--	--	--	--	--	--	--	--	--	(1/)
Franklin	--	2	--	--	--	17	--	--	--	--	--	19
Humboldt	--	7	--	--	(1/)	5	--	--	2	--	--	14
Kossuth	--	47	--	--	--	5	--	--	2	--	--	54
Lyon	--	2	--	--	--	--	--	--	--	--	--	2
Plymouth	--	52	--	--	--	--	--	--	--	--	--	52
Sioux	--	2	--	--	--	--	--	--	--	--	--	2
Winnebago	--	1	--	--	--	--	--	--	--	--	(1/)	1
Worth	--	6	--	--	(1/)	2	--	--	--	--	--	11
Wright	--	2	--	--	--	--	--	--	--	--	--	2
Total	--	122	--	--	1	28	--	--	4	--	(1/)	159

(Table 13 continued on next page)

(Table 13 continued)

Forest Survey Unit and county	Sycamore	Cotton-wood	Aspen	Black cherry	Red oak	White oak	Black locust	Willow	Basswood	Elm	Other hardwoods	All species
SOUTHEAST UNIT												
Appanoose	(1/)	20	--	(1/)	22	28	--	--	3	(1/)	--	141
Boone	--	17	--	1	27	9	--	--	17	1	--	126
Clarke	--	23	--	(1/)	4	5	--	--	--	--	--	45
Dallas	--	12	--	(1/)	2	1	--	--	(1/)	--	(1/)	40
Davis	(1/)	19	--	(1/)	19	42	--	--	3	(1/)	--	129
Decatur	--	11	--	(1/)	(1/)	(1/)	--	--	(1/)	--	(1/)	15
Des Moines	3	35	--	1	31	25	--	1	7	4	(1/)	222
Guthrie	--	3	--	--	--	--	--	--	(1/)	--	(1/)	4
Hamilton	--	7	--	(1/)	7	3	--	--	7	(1/)	--	34
Hardin	--	8	--	--	3	3	--	--	2	(1/)	--	33
Henry	3	75	--	1	57	56	--	--	11	4	(1/)	321
Iowa	3	46	--	2	23	28	--	3	9	4	--	219
Jasper	--	14	--	1	5	3	--	--	2	1	--	49
Jefferson	2	29	--	1	21	27	--	--	2	1	--	185
Keokuk	4	98	--	2	71	72	--	1	7	6	--	450
Lee	7	107	--	4	72	58	--	1	19	5	(1/)	741
Louisa	1	19	--	1	22	22	--	--	6	1	--	135
Lucas	--	9	--	(1/)	10	16	--	--	(1/)	--	--	61
Madison	--	(1/)	--	--	--	--	--	--	--	--	--	(1/)
Mahaska	2	48	--	1	36	36	--	1	4	2	--	240
Marion	--	39	--	1	26	18	--	--	4	(1/)	--	125
Marshall	--	14	--	(1/)	3	3	--	(1/)	2	1	--	45
Monroe	--	27	--	1	32	28	--	--	3	1	--	119
Muscatine	5	45	--	3	50	41	--	--	6	5	--	232
Polk	--	6	--	(1/)	(1/)	14	--	--	--	(1/)	--	43
Poweshiek	(1/)	26	--	1	22	16	--	(1/)	1	(1/)	--	74
Story	--	2	--	--	1	(1/)	--	--	--	--	--	7
Van Buren	1	26	--	2	41	29	--	--	15	3	(1/)	195
Wapello	2	43	--	1	42	43	--	--	4	1	--	225
Warren	--	18	--	--	--	(1/)	--	--	--	--	--	28
Washington	2	55	--	1	30	31	--	1	7	4	--	257
Wayne	--	7	--	(1/)	9	15	--	--	1	--	--	56
Webster	--	8	--	1	20	5	--	--	15	1	--	78
Total	35	918	--	27	708	677	--	8	157	46	1	4,675
SOUTHWEST UNIT												
Cass	--	--	--	--	--	(1/)	--	--	--	--	--	5
Crawford	--	2	--	--	--	1	--	--	--	--	--	3
Fremont	--	3	--	--	2	2	--	--	--	--	--	9
Greene	--	3	--	--	1	1	--	--	(1/)	1	--	26
Harrison	--	321	--	--	1	6	--	--	(1/)	9	(1/)	364
Mills	--	4	--	--	2	2	--	--	--	(1/)	--	15
Monona	--	59	--	--	1	3	--	--	--	(1/)	--	64
Montgomery	--	--	--	--	(1/)	(1/)	--	--	--	(1/)	--	6
Page	--	(1/)	--	(1/)	(1/)	1	--	--	--	(1/)	--	2
Pottawattamie	--	3	--	--	2	1	--	--	1	--	1	37
Ringgold	--	(1/)	--	--	(1/)	1	--	--	(1/)	--	--	6
Shelby	--	--	--	--	--	(1/)	--	--	--	--	--	5
Taylor	--	--	--	--	--	--	--	--	1	--	--	2
Union	--	--	--	--	--	--	--	--	--	--	--	2
Woodbury	--	50	--	(1/)	1	(1/)	--	--	--	--	--	52
Total	--	447	--	(1/)	11	18	--	--	4	10	2	597
State total	40	1,766	61	104	2,237	1,759	3	20	709	270	8	11,077

1/ Less than 500 cubic feet.

Table 14.--Residues produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Iowa, 1994

(In thousand tons, green weight)

Forest Survey Unit and type of use	Total all material		Wood residue							
			Coarse 1/		Fine 2/		Total wood residue		Bark	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
NORTHEAST UNIT										
Fiber products	--	18.10	--	17.51	--	--	--	17.51	--	0.59
Industrial fuel	0.01	13.78	0.01	5.19	--	7.55	0.01	12.74	(4/)	1.04
Domestic fuel	0.01	26.10	0.01	23.92	--	--	0.01	23.92	(4/)	2.18
Miscellaneous 3/	0.01	79.86	--	24.38	0.01	28.39	0.01	52.77	(4/)	27.09
Not used	--	2.06	--	1.94	--	0.08	--	2.02	--	0.04
Total	0.03	139.88	0.02	72.94	0.01	36.02	0.03	108.95	(4/)	30.93
NORTHWEST UNIT										
Domestic fuel	--	1.20	--	0.84	--	--	--	0.84	--	0.36
Miscellaneous 3/	--	1.19	--	0.35	--	0.69	--	1.04	--	0.15
Total	--	2.37	--	1.18	--	0.69	--	1.87	--	0.50
SOUTHEAST UNIT										
Fiber products	(4/)	29.16	(4/)	24.31	--	--	(4/)	24.31	--	4.85
Industrial fuel	0.01	9.51	0.01	8.62	(4/)	0.01	0.01	8.63	(4/)	0.88
Domestic fuel	0.14	18.54	0.10	13.86	(4/)	0.02	0.10	13.89	0.04	4.65
Miscellaneous 3/	0.04	50.88	(4/)	4.90	0.04	32.94	0.04	37.84	(4/)	13.04
Not used	0.01	2.37	0.01	1.45	--	0.46	0.01	1.90	(4/)	0.47
Total	0.20	110.45	0.11	53.14	0.05	33.43	0.16	86.56	0.04	23.89
SOUTHWEST UNIT										
Industrial fuel	--	3.13	--	1.78	--	0.59	--	2.37	--	0.76
Domestic fuel	(4/)	1.30	(4/)	0.66	--	0.38	(4/)	1.04	--	0.26
Miscellaneous 3/	(4/)	4.65	--	2.64	(4/)	0.90	(4/)	3.53	--	1.12
Not used	(4/)	0.02	--	--	--	--	--	--	(4/)	0.02
Total	0.01	9.10	(4/)	5.08	(4/)	1.87	0.01	6.94	(4/)	2.16
ALL UNITS										
Fiber products	(4/)	47.26	(4/)	41.82	--	--	(4/)	41.82	--	5.44
Industrial fuel	0.02	26.40	0.02	15.58	(4/)	8.15	0.02	23.73	(4/)	2.67
Domestic fuel	0.15	47.14	0.11	39.28	(4/)	0.40	0.11	39.69	0.04	7.45
Miscellaneous 3/	0.06	136.56	(4/)	32.26	0.06	62.92	0.06	95.17	(4/)	41.39
Not used	0.01	4.45	0.01	3.38	--	0.54	0.01	3.92	(4/)	0.53
Total	0.25	261.81	0.14	132.33	0.06	72.00	0.20	204.33	0.05	57.48

1/ Suitable for chipping such as slabs, edgings, veneer cores, etc.
2/ Not suitable for chipping such as sawdust, veneer clippings, etc.
3/ Livestock bedding, mulch, small dimension, and specialty items.
4/ Less than 5 green tons.

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Piva, Ronald J.
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Discusses recent Iowa forest industry trends; production and receipts of industrial roundwood; and production of saw logs, veneer logs, and pulpwood in 1994, and compares findings with earlier surveys. Reports on the quantity, type, and disposition of wood and bark residues generated by the primary wood-using industry.

KEY WORDS: Industrial roundwood, saw logs, veneer logs, pulpwood, production, receipts, residues.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.